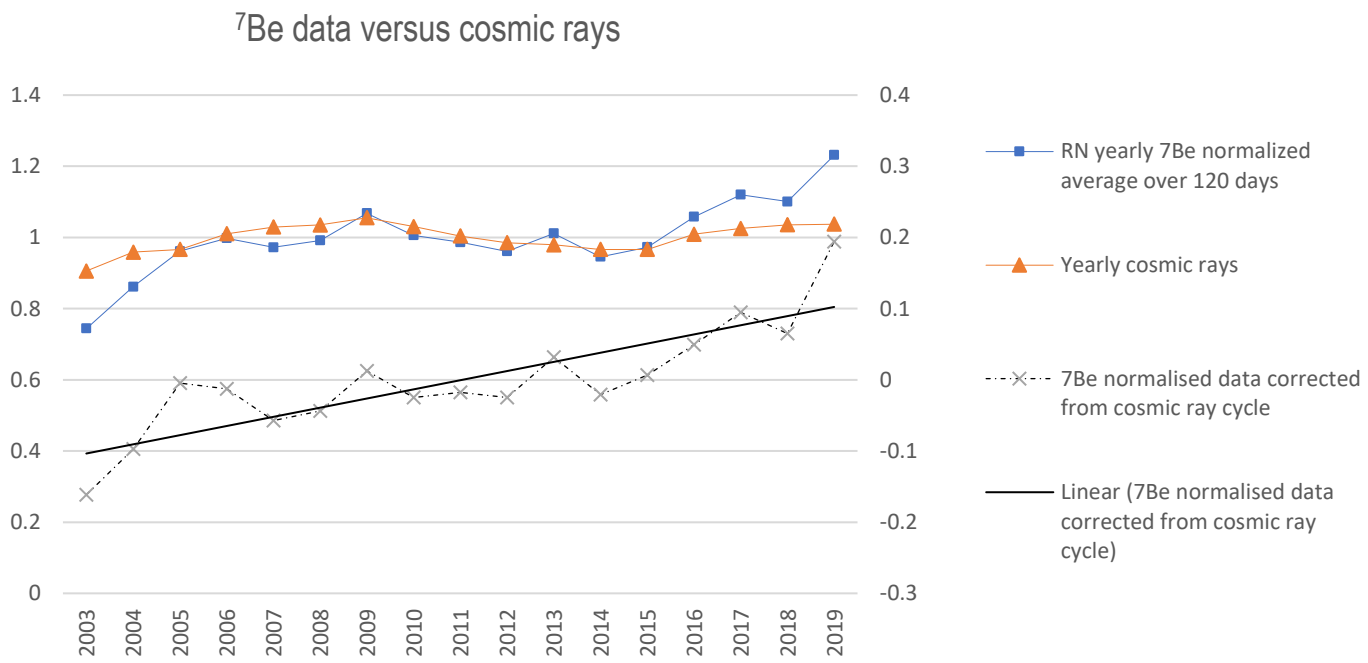
Title: Radioisotopes demonstrate changes in global atmospheric circulation possibly caused by global warming

Authors: Lucrezia Terzi[a,b*], Gerhard Wotawa[c], Michael Schoeppner[d,e], Martin Kalinowski[d], Paul R.J. Saey[b],Philipp Steinmann[f], Lan Luan[g] and Paul W. Staten[g].

Affiliations: [a]Belgian Nuclear Research Centre (SCK•CEN), Mol, Belgium; [b]Technische Universität Wien, Atominstitut, Austria; [c]Zentralanstalt für Meteorologie und Geodynamik (ZAMG), Vienna, Austria, [d]Provisional Technical Secretariat, Preparatory Commission for the Nuclear-Test-Ban Treaty Organization, International Data Centre, Vienna, Austria; [e]Institute of Safety/Security and Risk Sciences, Vienna, Austria; [f]Federal Office of Public Health (BAG), Bern, Switzerland; [g]Indiana University Bloomington, Bloomington, Indiana, USA.

***Corresponding Author:**
Lucrezia Terzi
Ph: +43 6644553833
e-mail: lucrezia.terzi@sckcen.be
[a] SCK•CEN, Belgium Nuclear Research Centre,
Boeretang 200, 2400 Mol, Belgium.
[b] Technische Universität Wien, Atominstitut,
Stadionallee 2, 1020 Wien, Austria.

RN01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1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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2016
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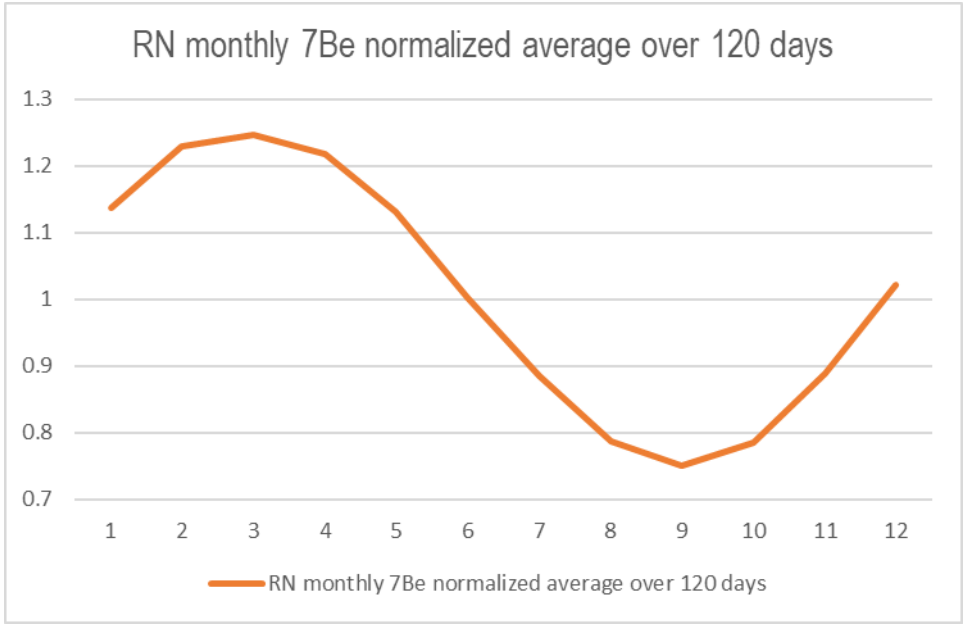
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)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1.2
1.1
1
0.9
0.8
0.7
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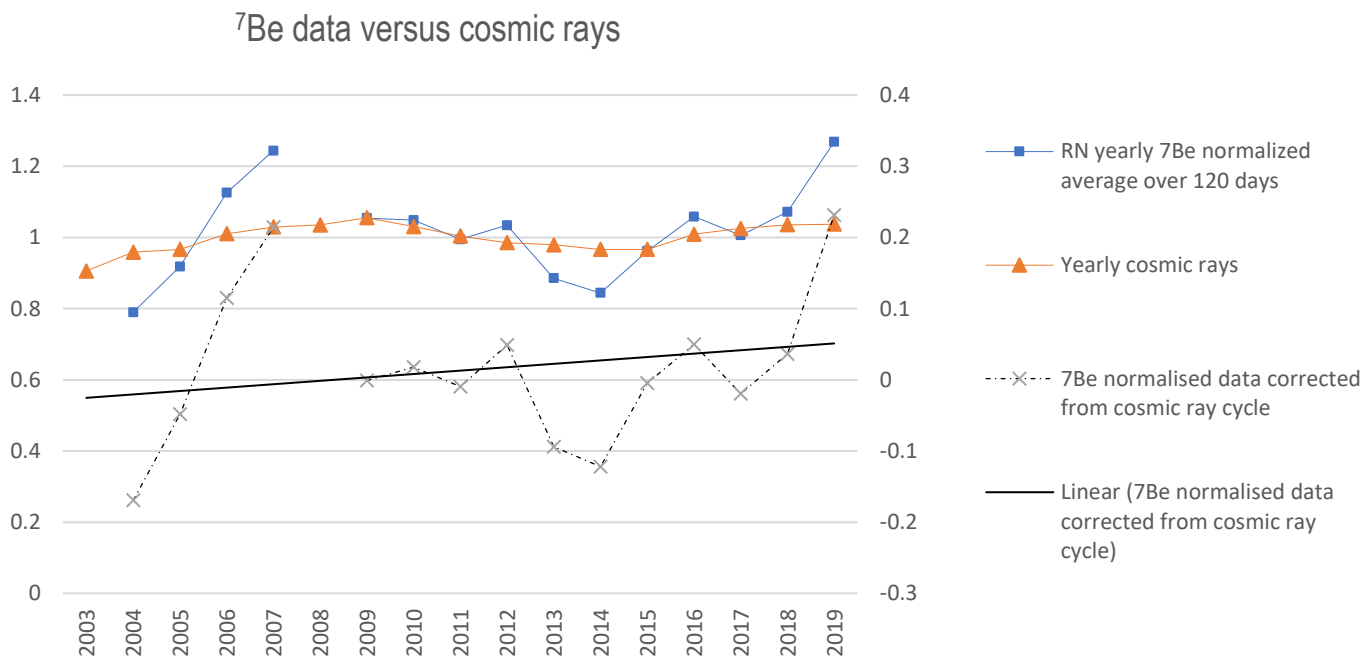
10
11
12
RN monthly 7Be normalized average over 120 days

RN03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0.8
0.6
0.4
0.2
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0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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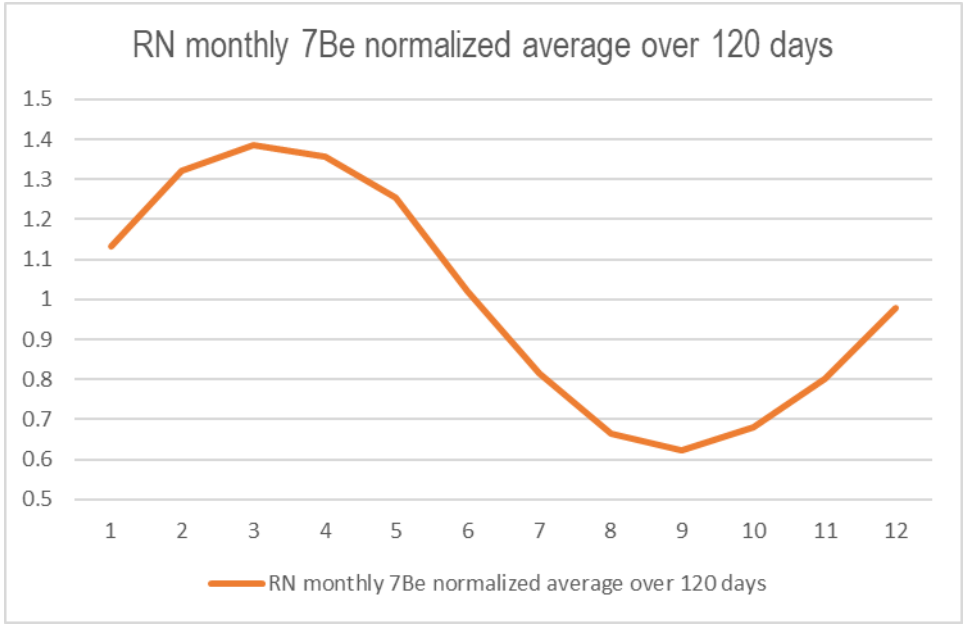
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)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1.1
1
0.9
0.8
0.7
0.6
0.5
1
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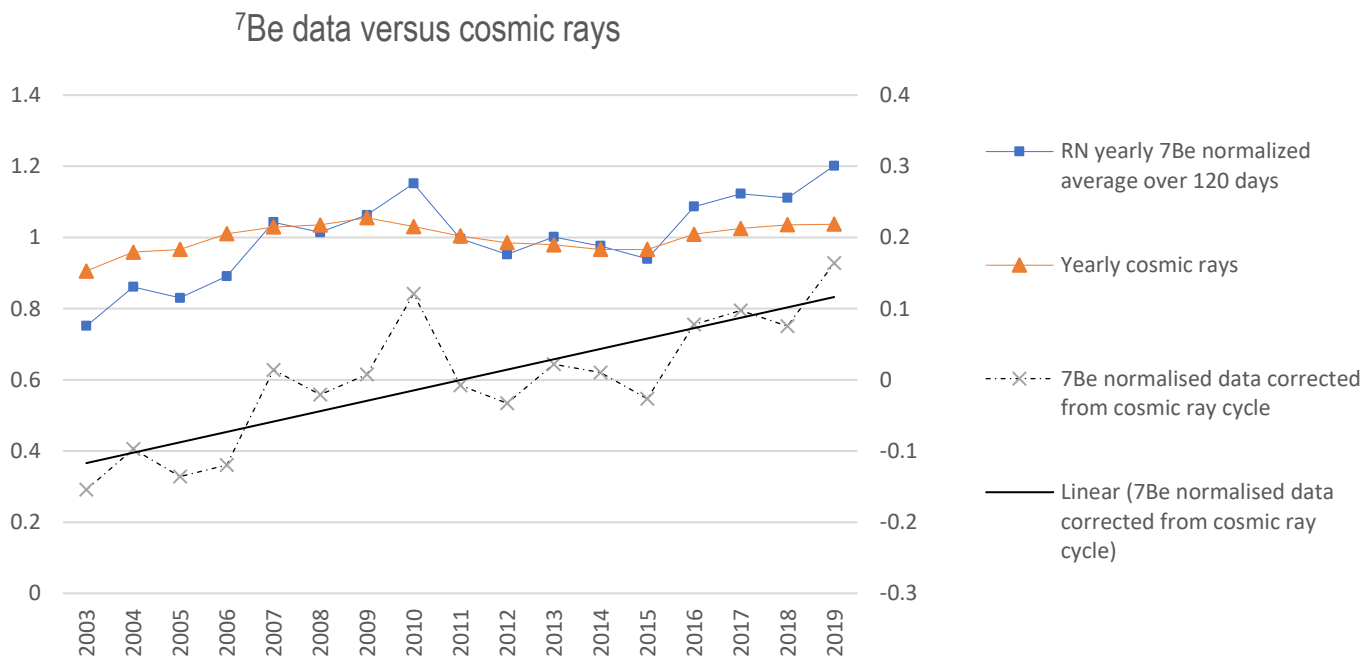
11
12
RN monthly 7Be normalized average over 120 days

RN04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0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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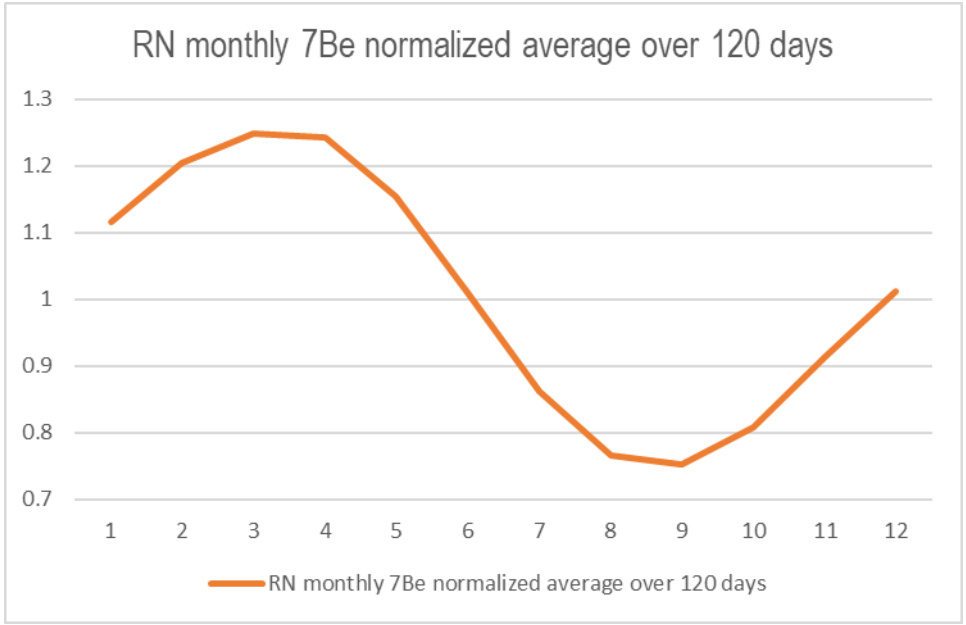
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)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1.3
1.2
1.1
1
0.9
0.8
0.7
1
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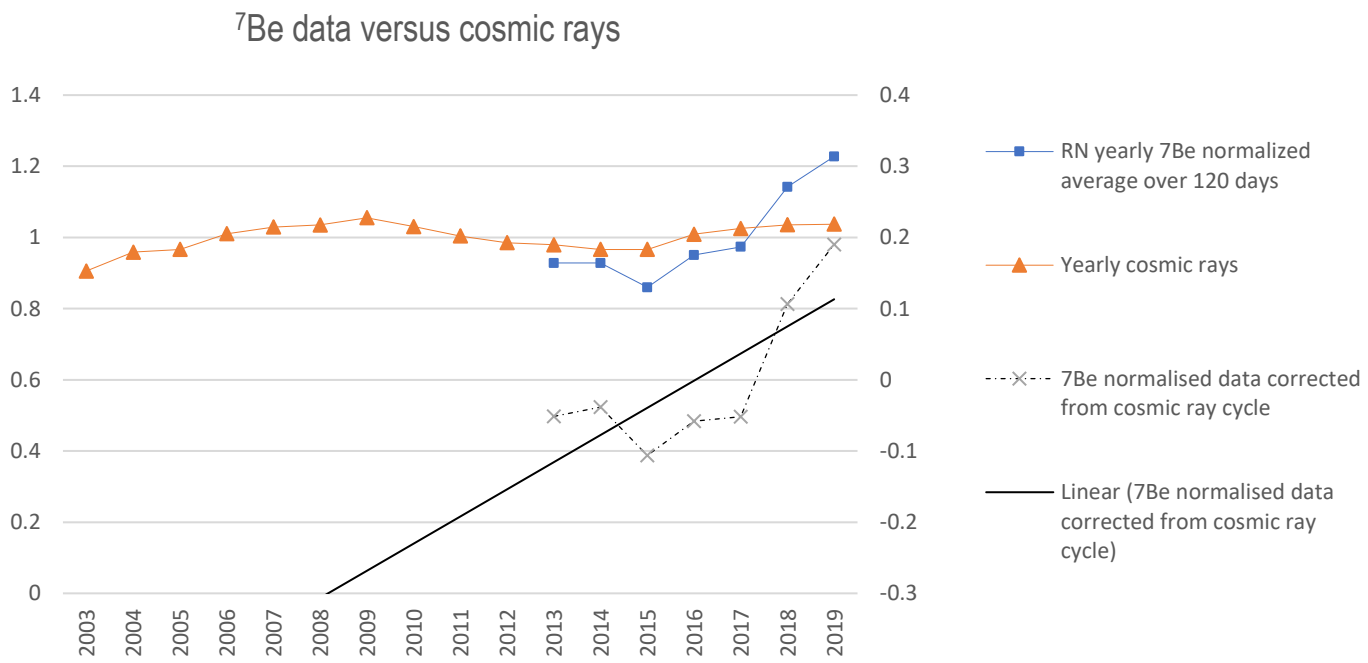
10
11
12
RN monthly 7Be normalized average over 120 days

RN05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1.2
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0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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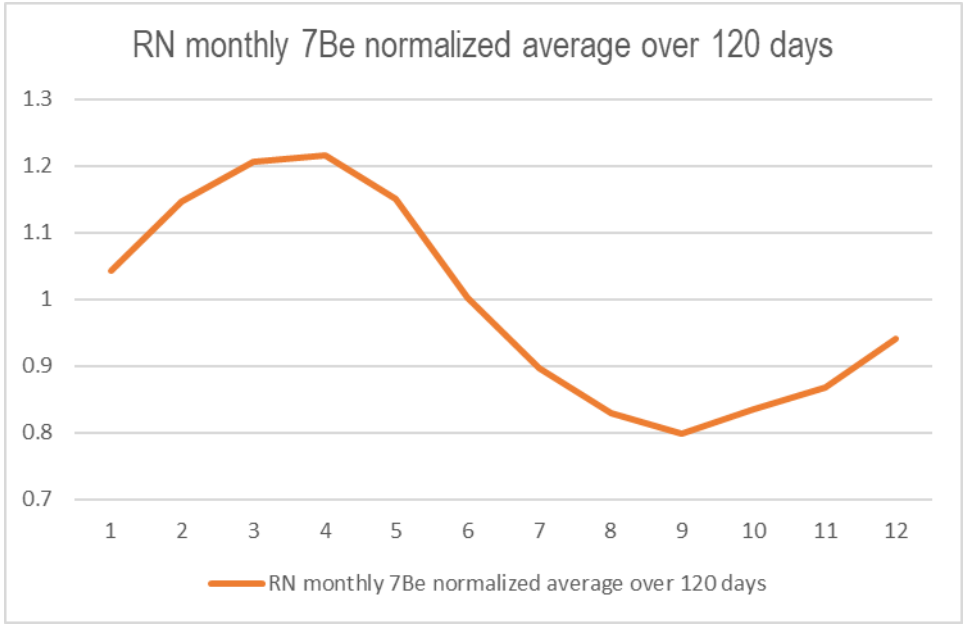
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)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1
0.9
0.8
0.7
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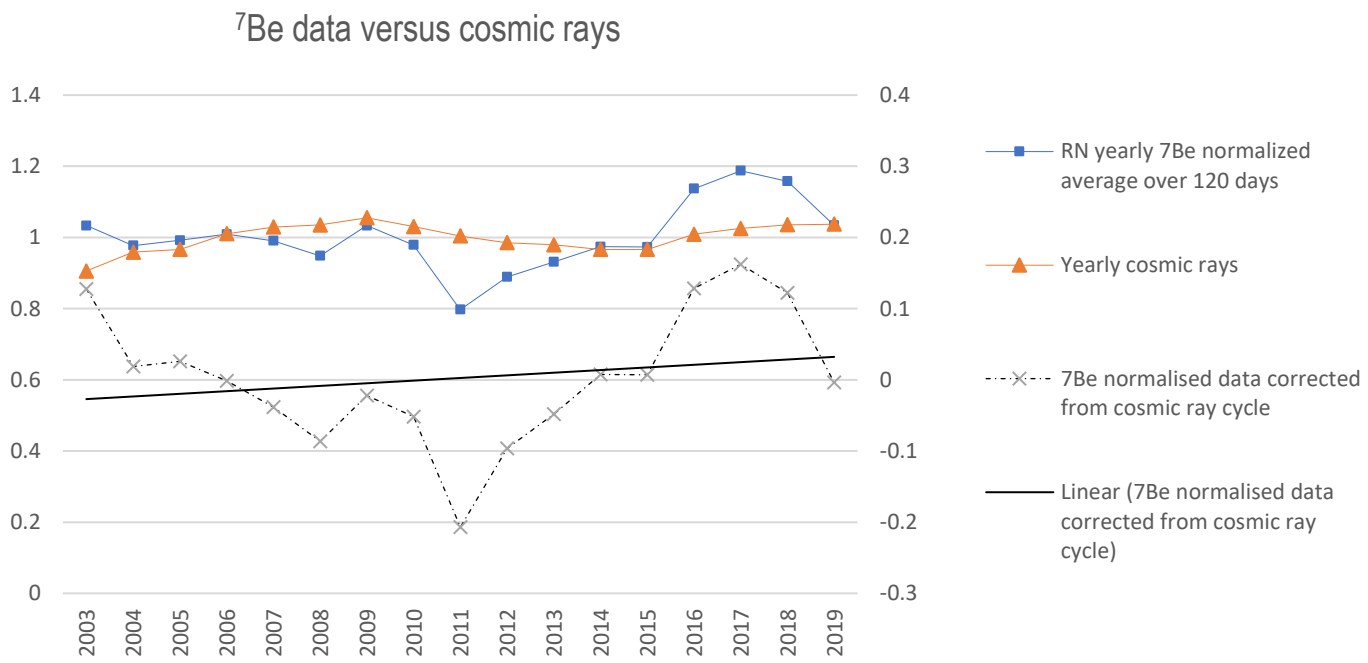
10
11
12
RN monthly 7Be normalized average over 120 days

RN06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0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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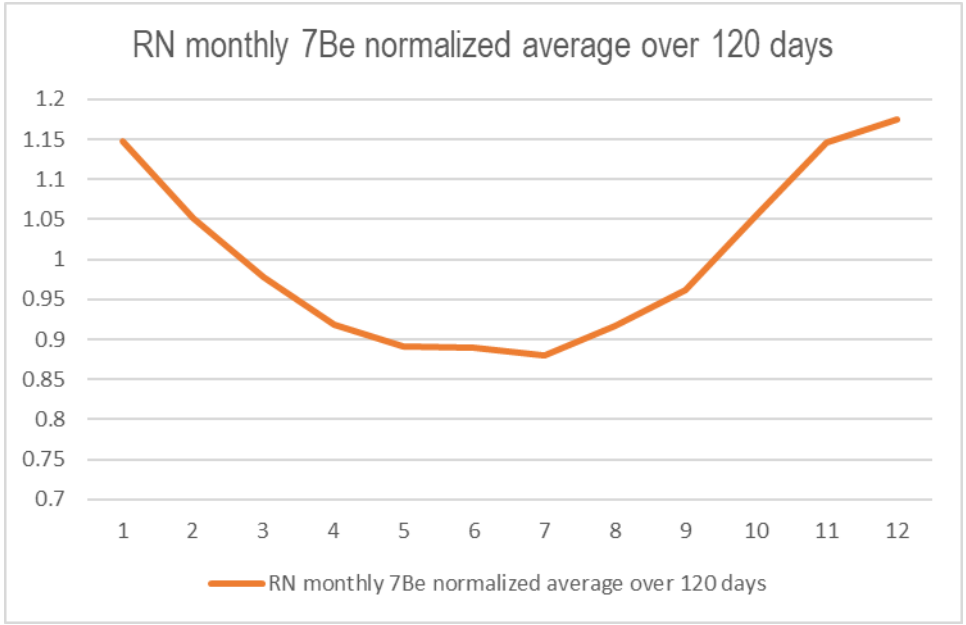
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)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1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
1
2
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7
8
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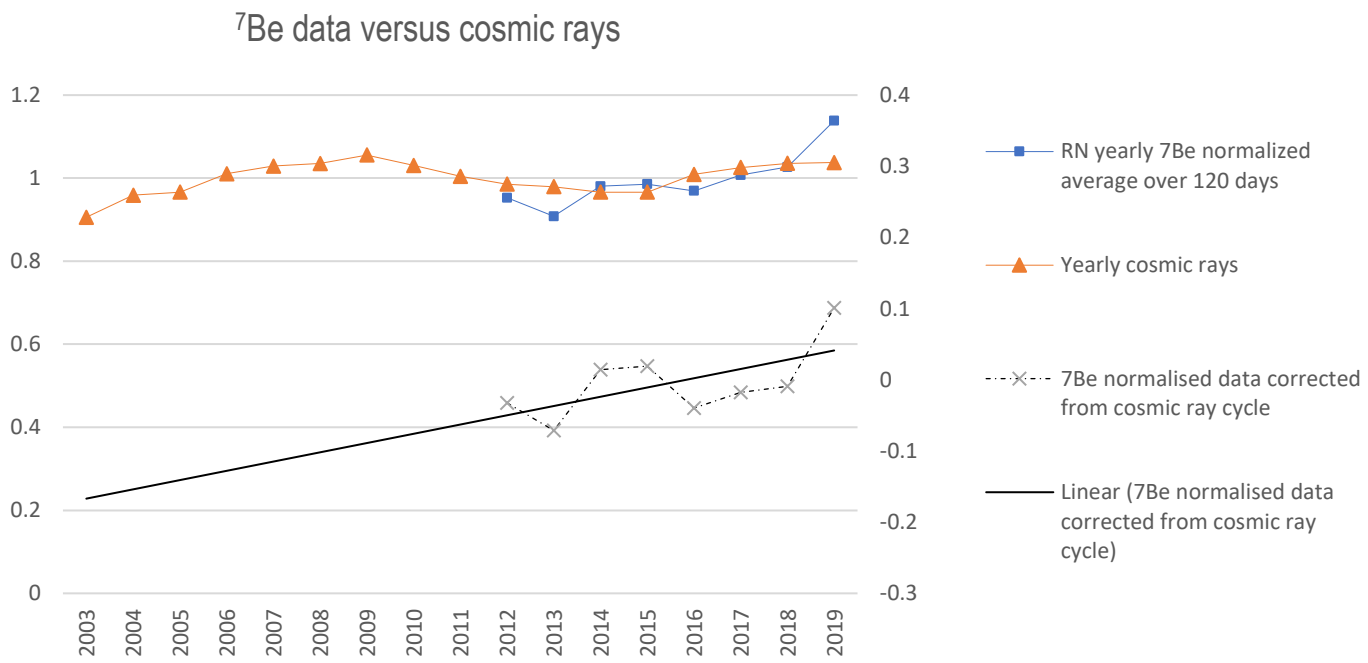
10
11
12
RN monthly 7Be normalized average over 120 days

RN07


7Be data versus cosmic rays
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1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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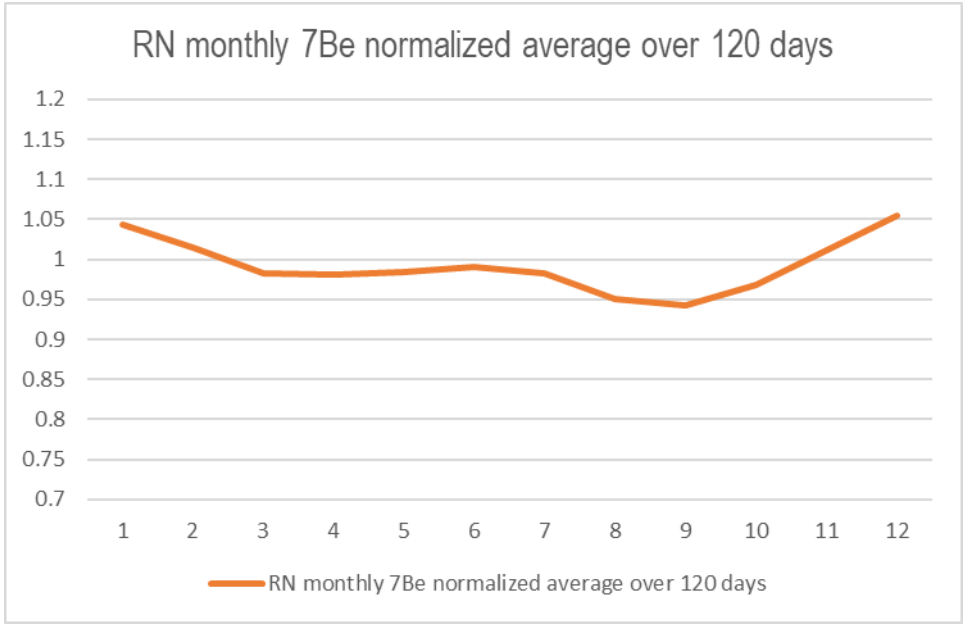
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
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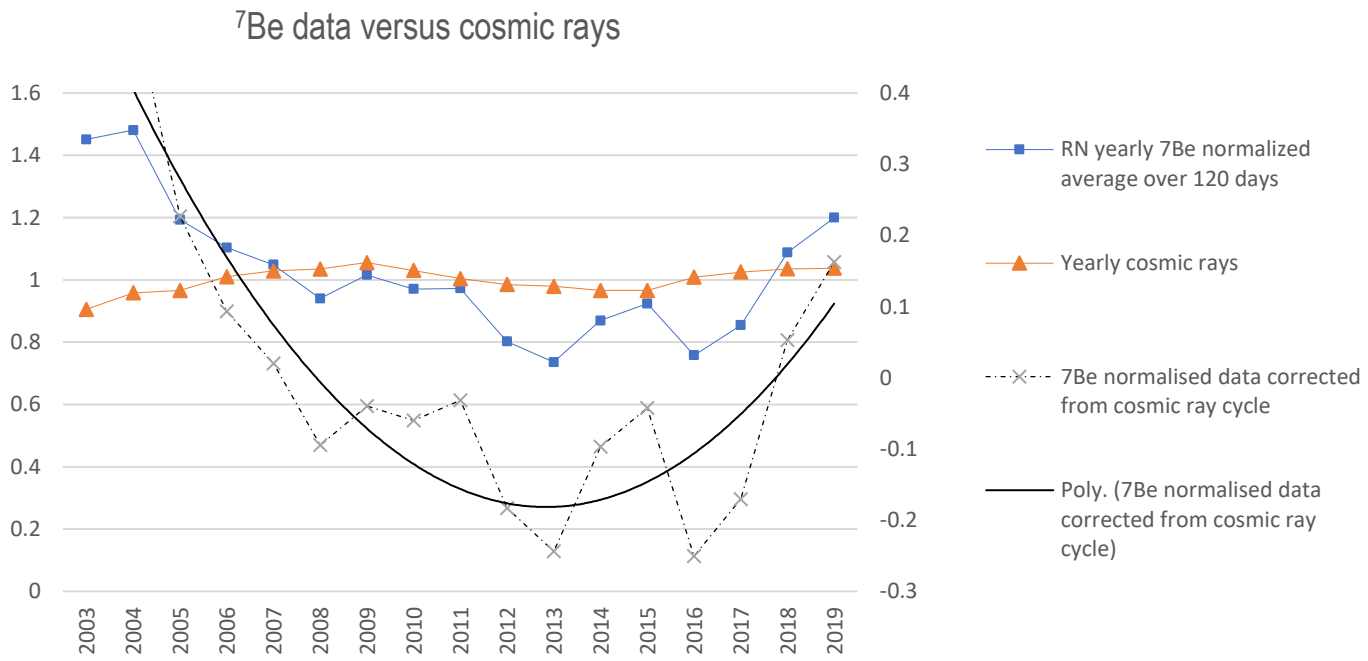
RN monthly 7Be normalized average over 120 days

RN08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1.2
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0.8
0.6
0.4
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0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
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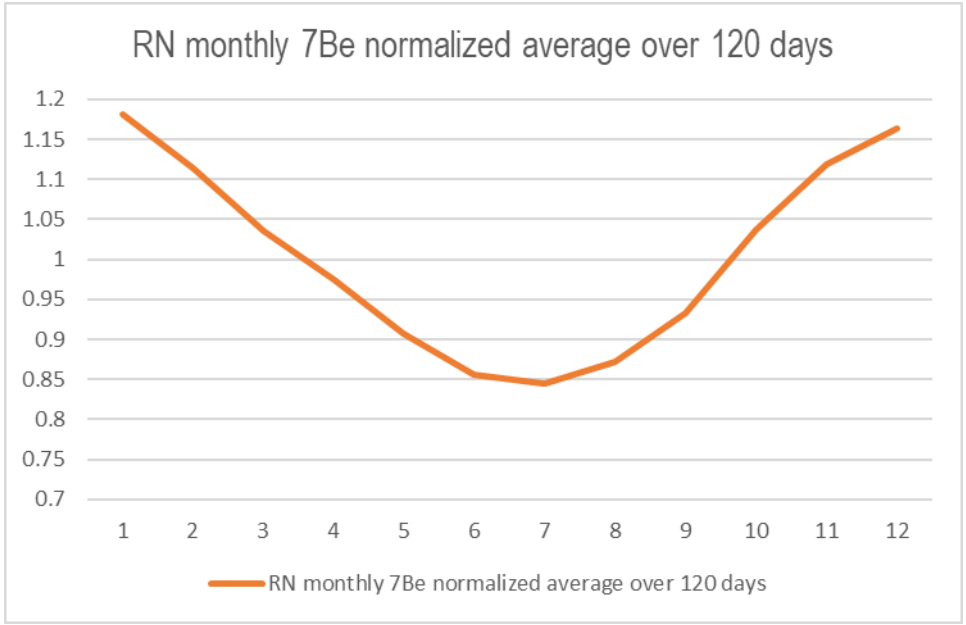
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Poly. (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
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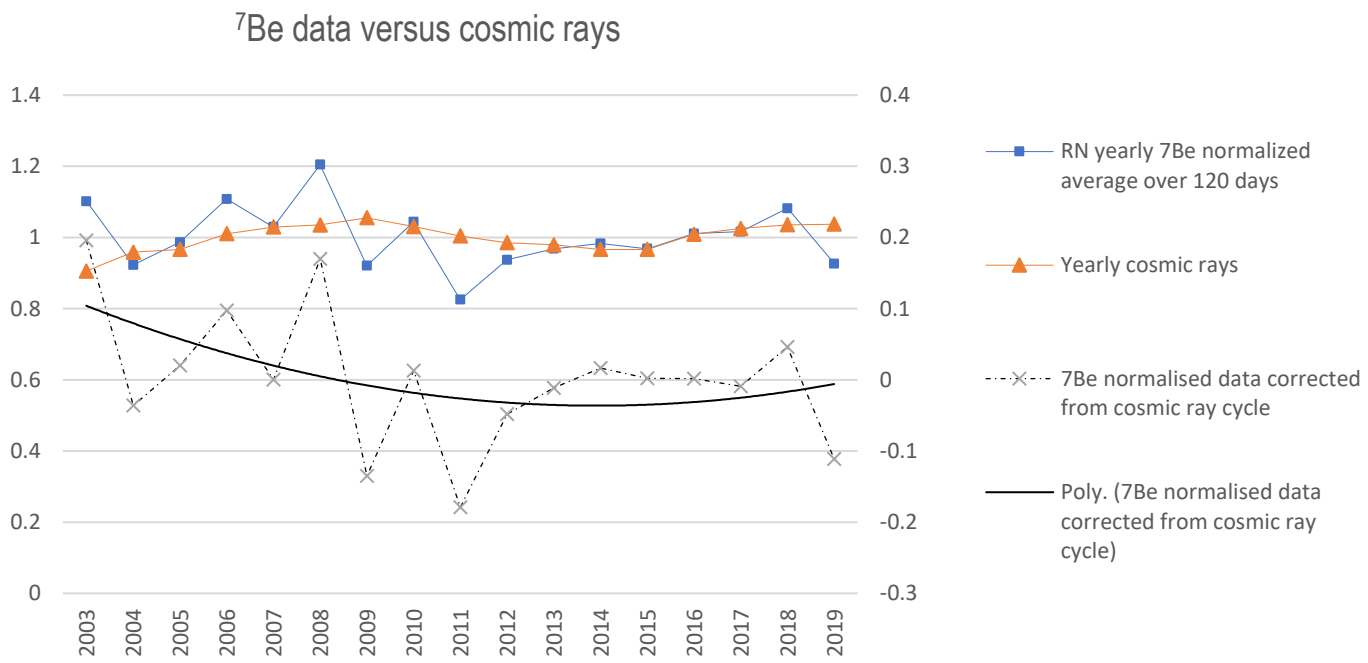
12
RN monthly 7Be normalized average over 120 days

RN09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0.4
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0.4
0.3
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0.1
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-0.1
-0.2
-0.3
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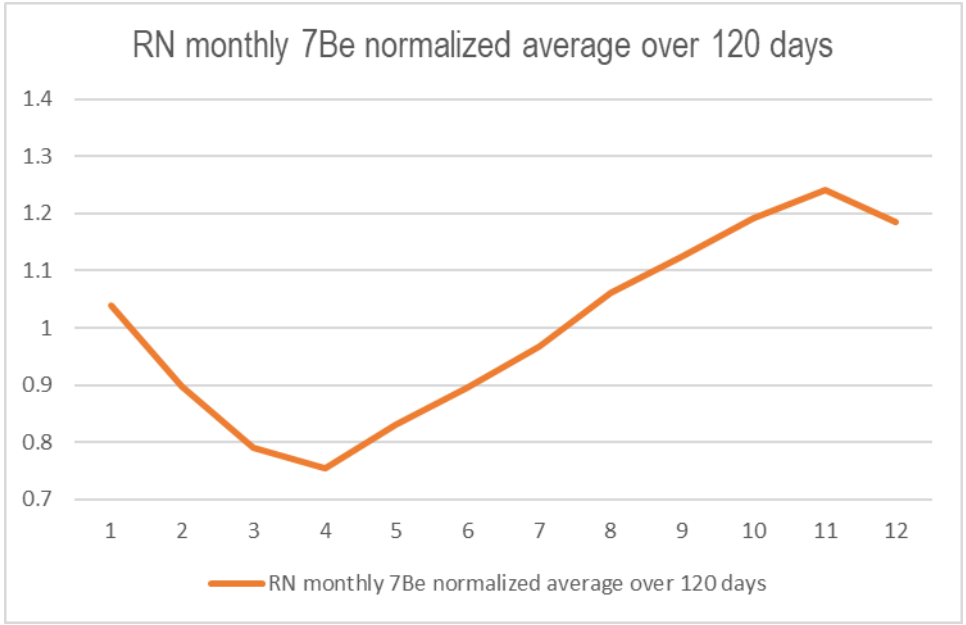
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Poly. (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
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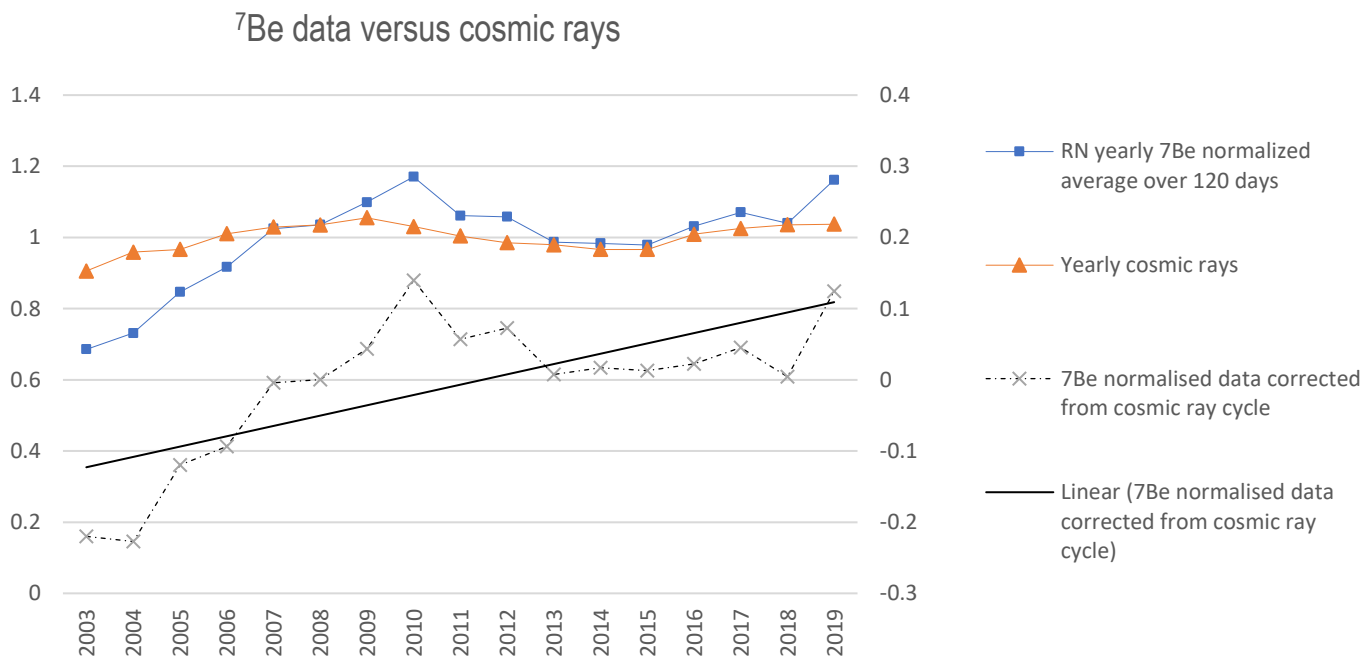
11
12
RN monthly 7Be normalized average over 120 days

RN10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0.8
0.6
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0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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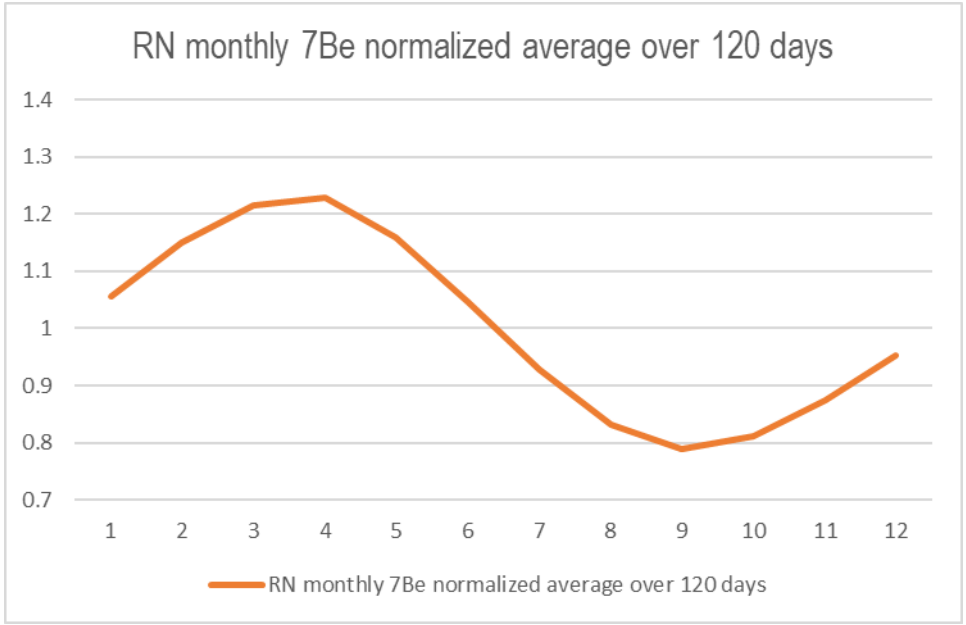
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
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1.2
1.1
1
0.9
0.8
0.7
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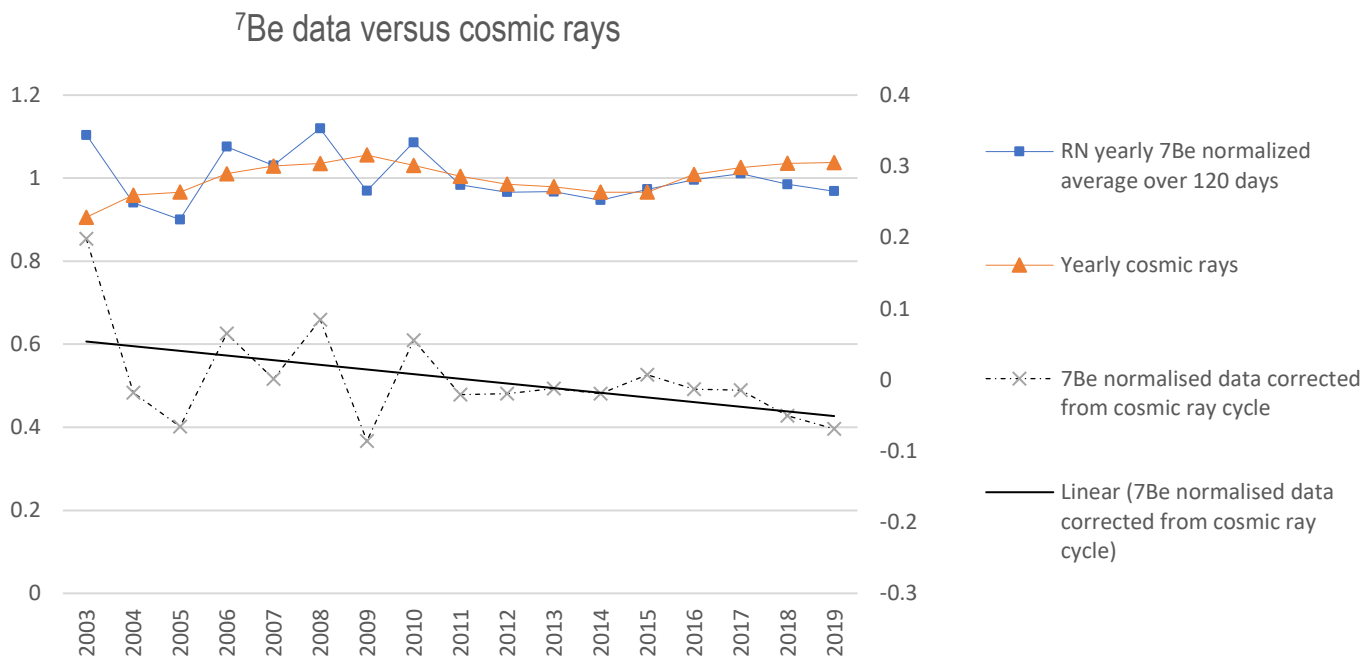
11
12
RN monthly 7Be normalized average over 120 days

RN11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0.8
0.6
0.4
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0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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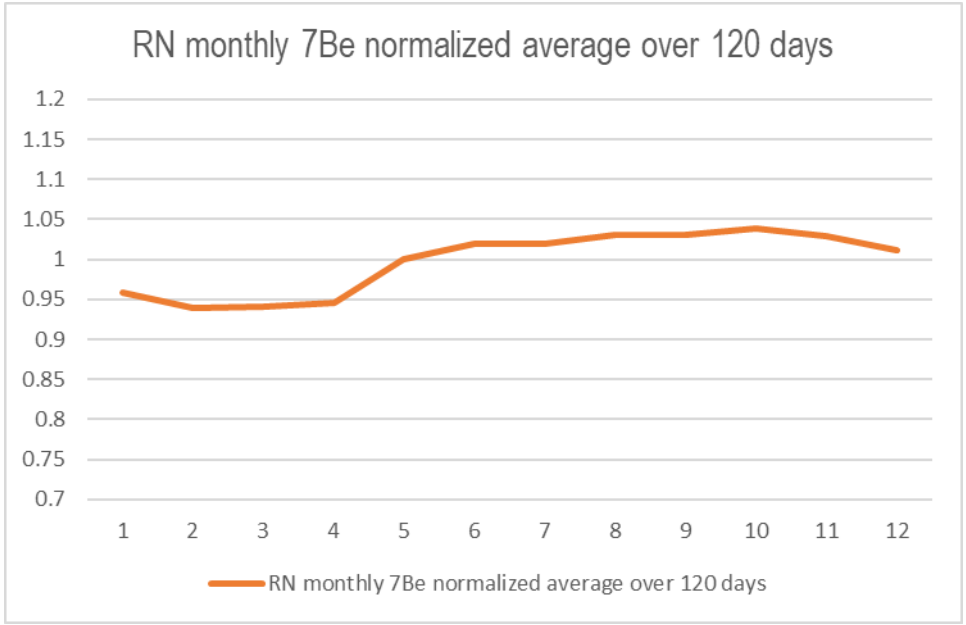
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
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1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
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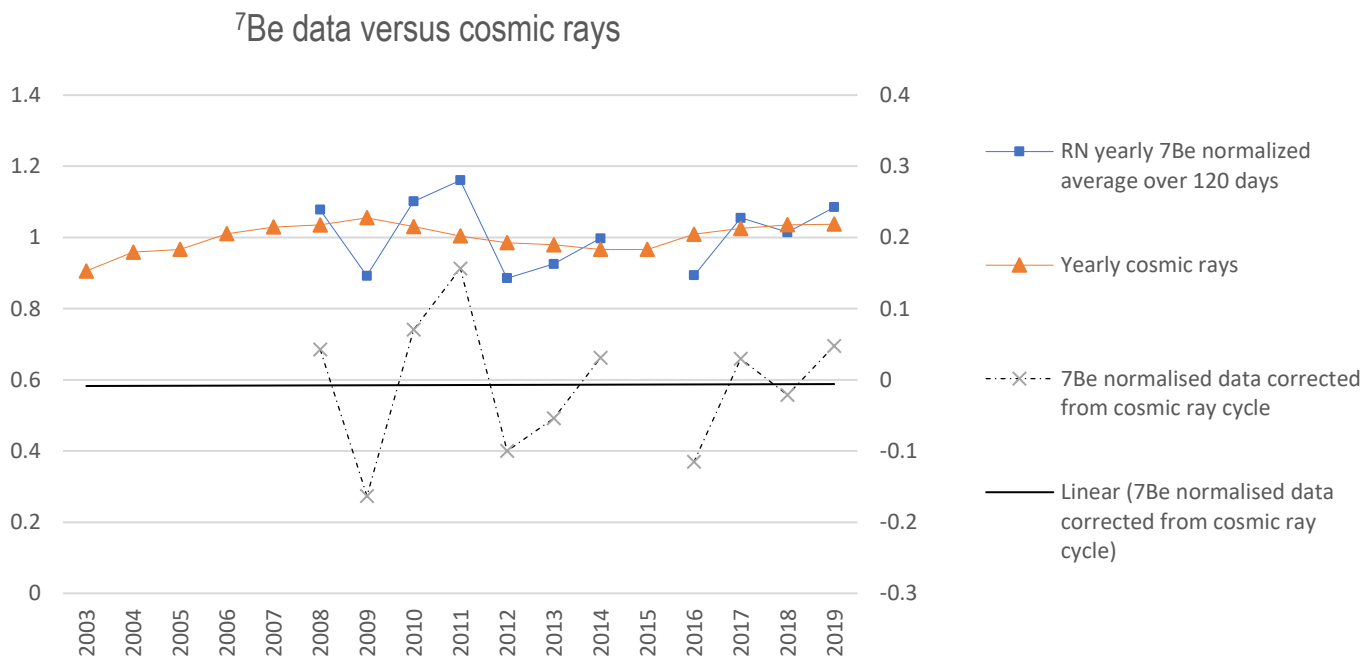
12
RN monthly 7Be normalized average over 120 days

RN13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0.1
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-0.1
-0.2
-0.3
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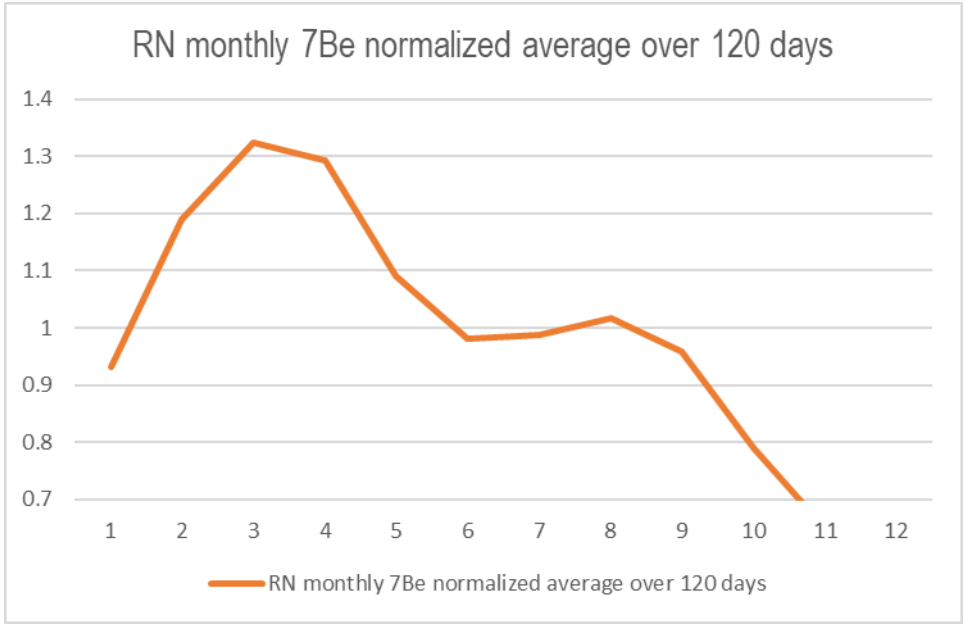
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
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1.1
1
0.9
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0.7
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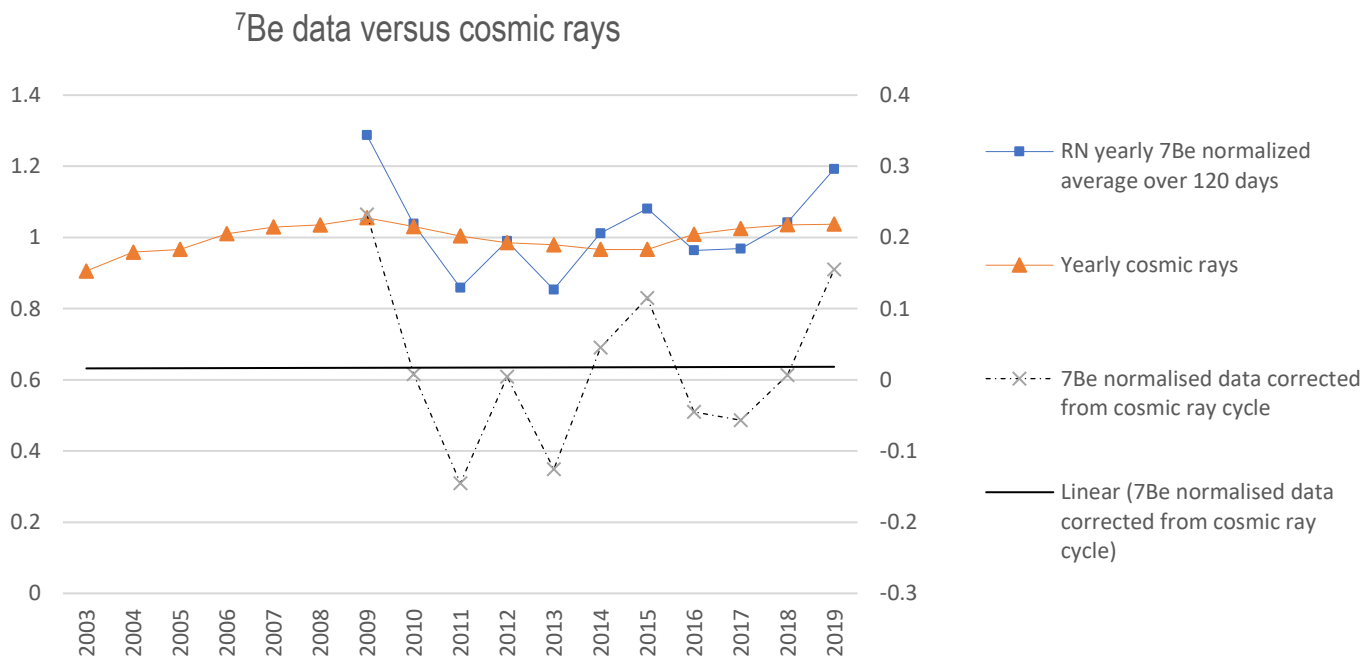
RN monthly 7Be normalized average over 120 days

RN14


7Be data versus cosmic rays
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1.2
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0.8
0.6
0.4
0.2
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0.3
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0.1
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-0.2
-0.3
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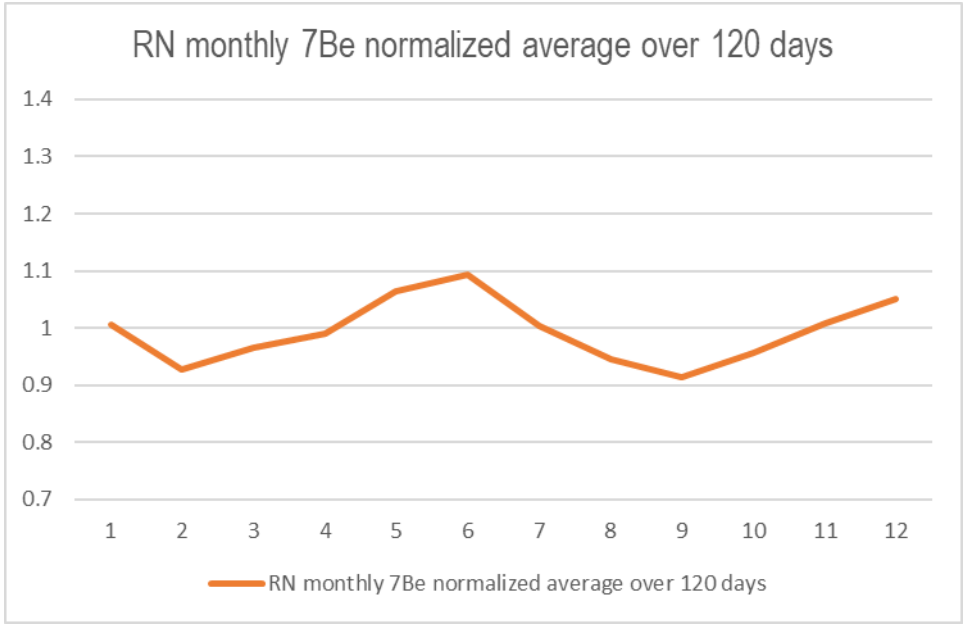
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
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1.2
1.1
1
0.9
0.8
0.7
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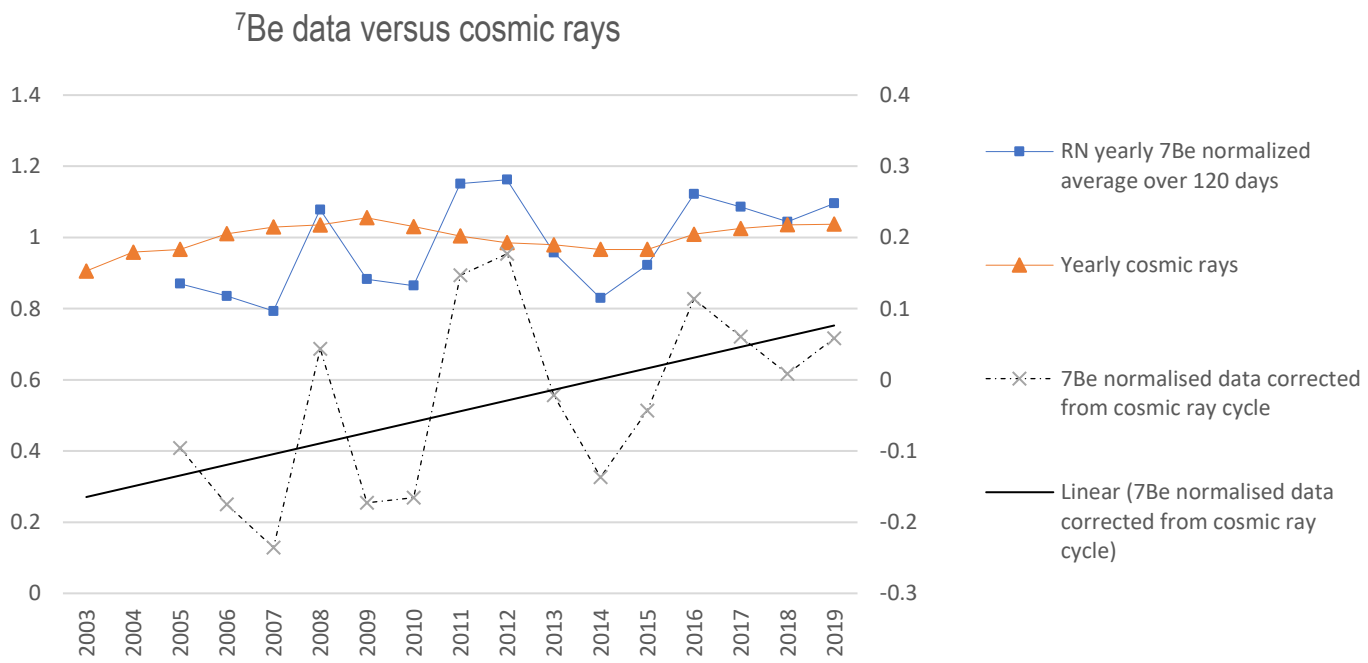
12
RN monthly 7Be normalized average over 120 days

RN15


7Be data versus cosmic rays
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1.2
1
0.8
0.6
0.4
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-0.1
-0.2
-0.3
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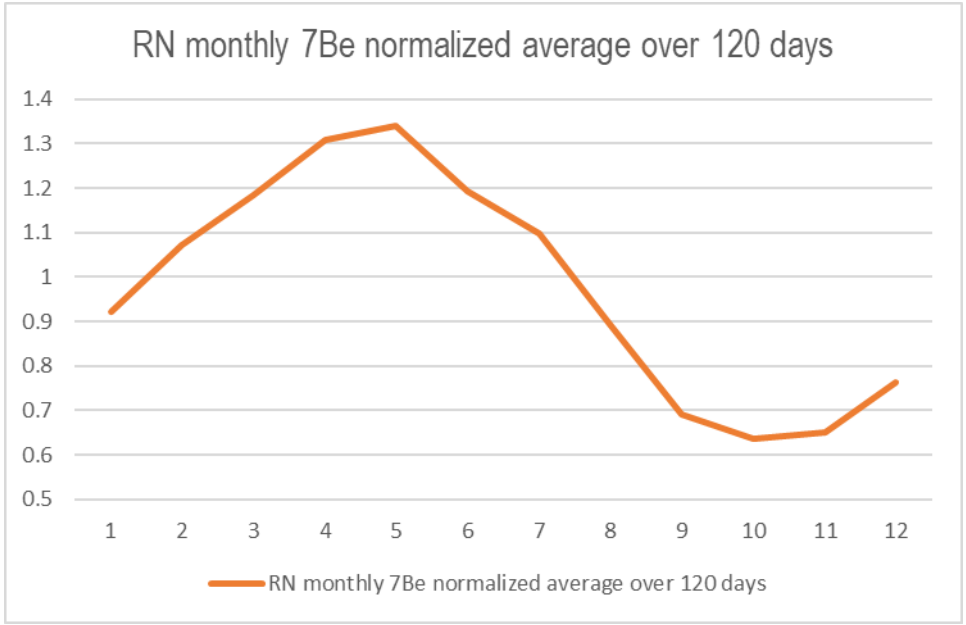
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
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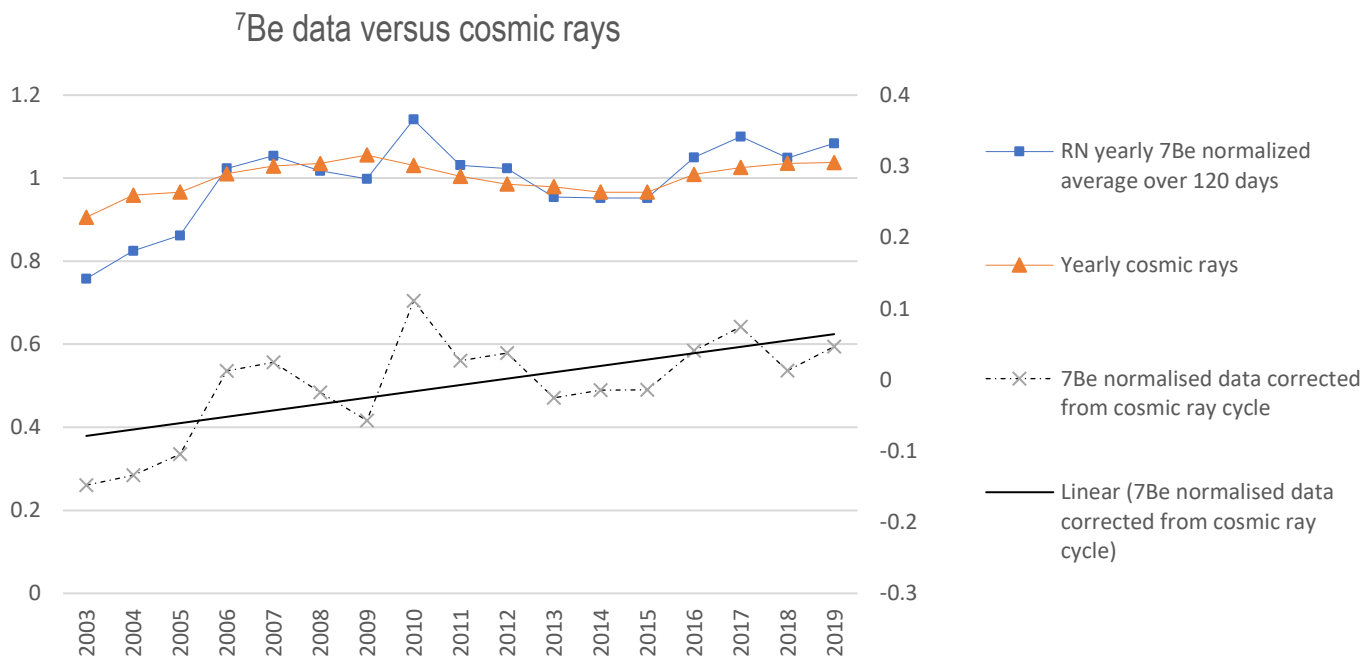
12
RN monthly 7Be normalized average over 120 days

RN16


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
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0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
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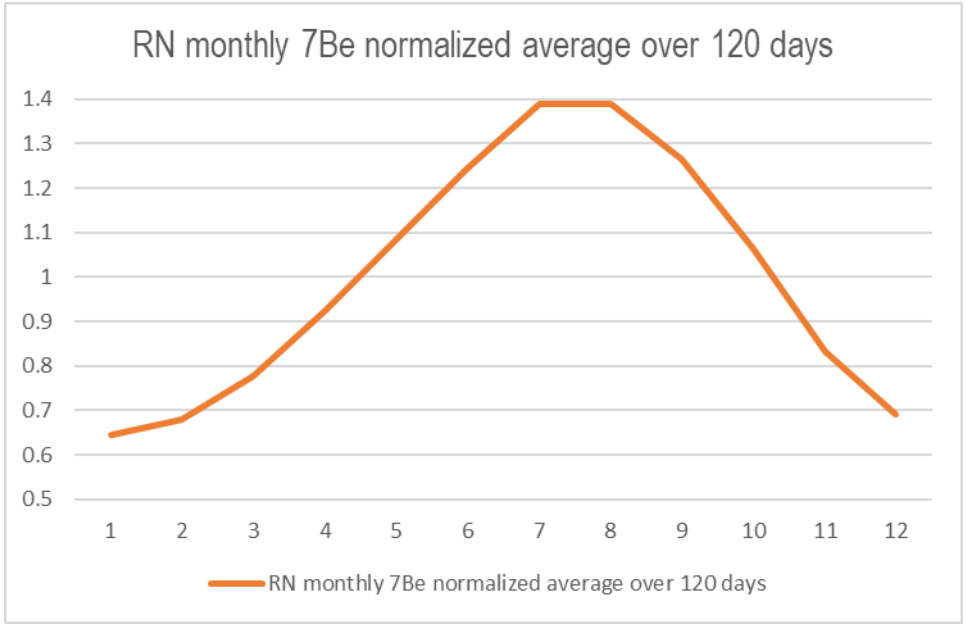
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
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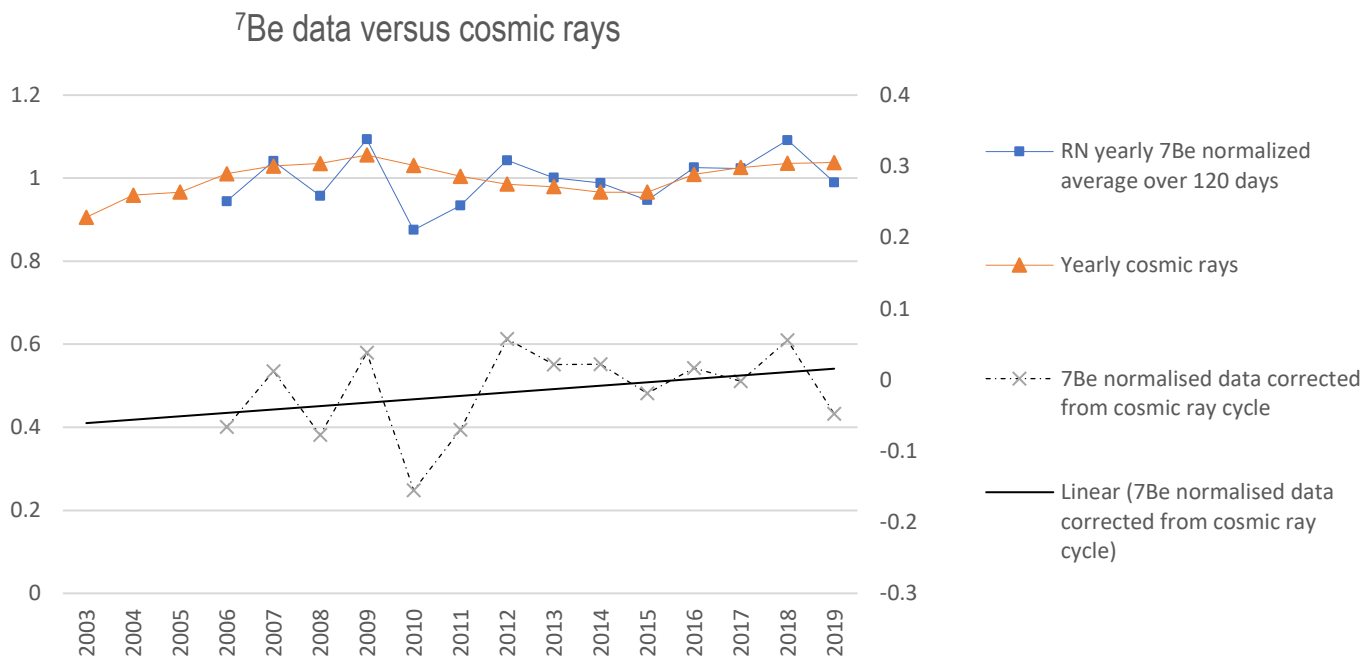
11
12
RN monthly 7Be normalized average over 120 days

RN17


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
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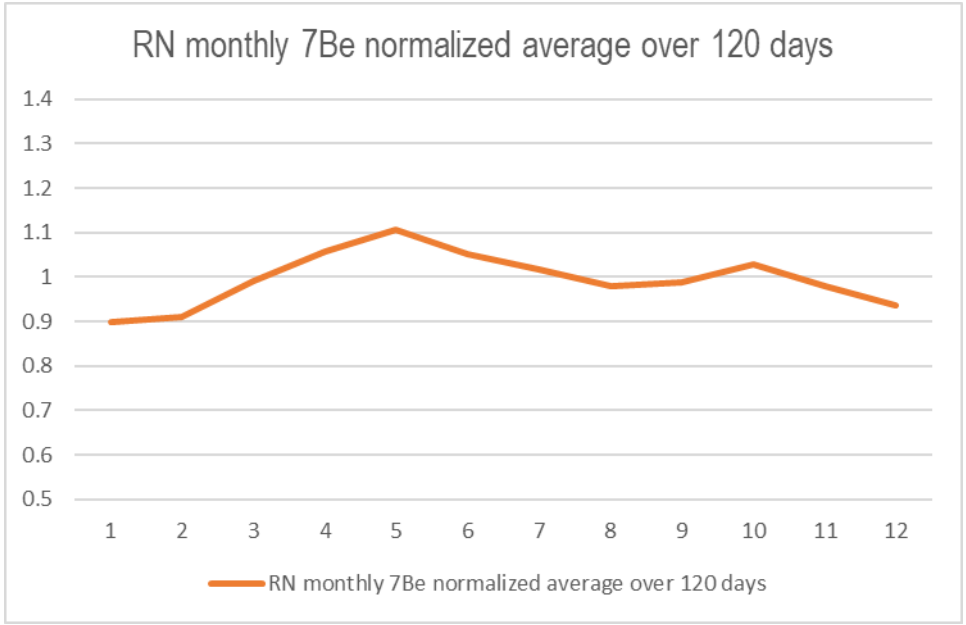
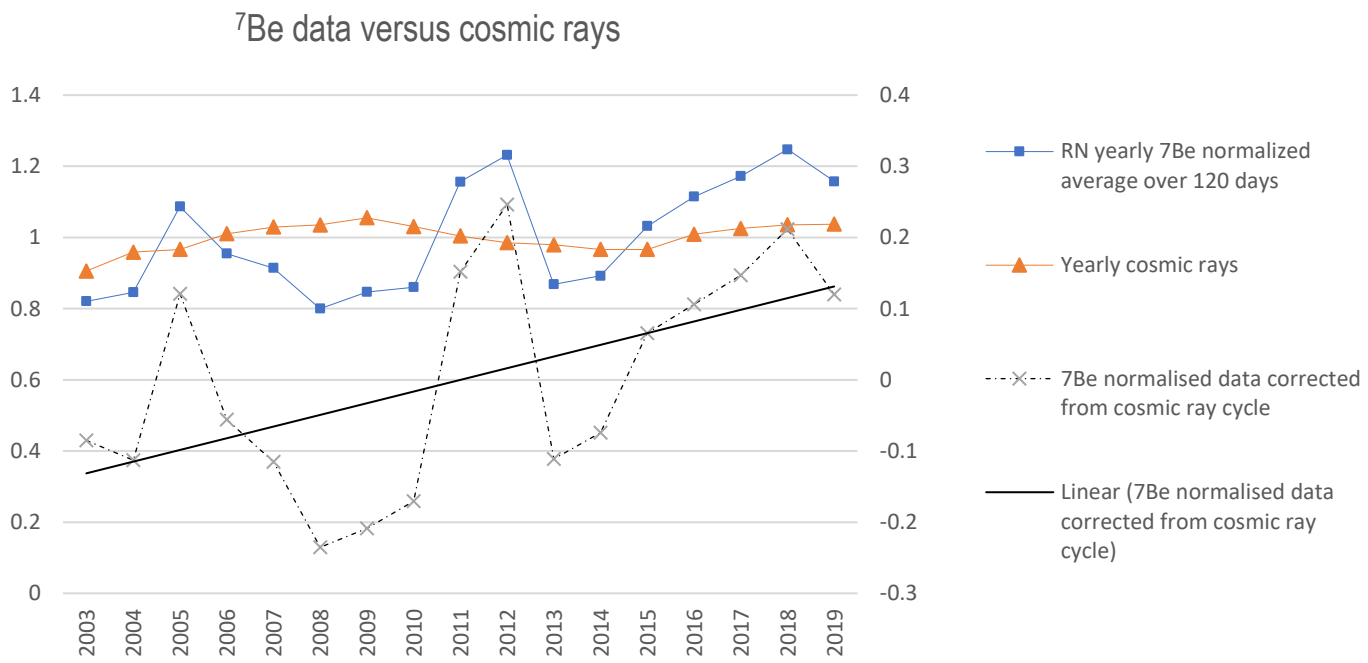
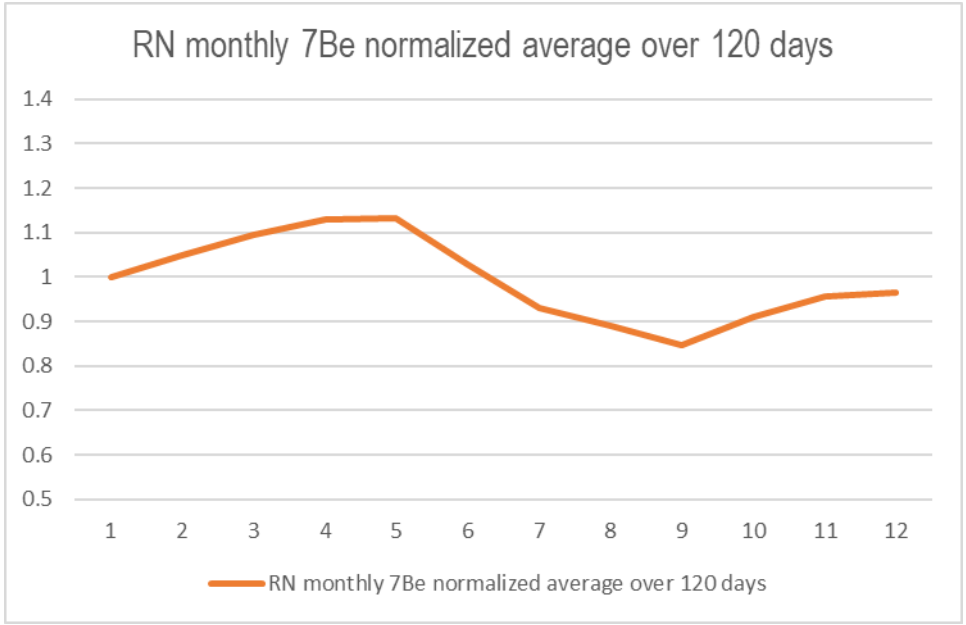
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

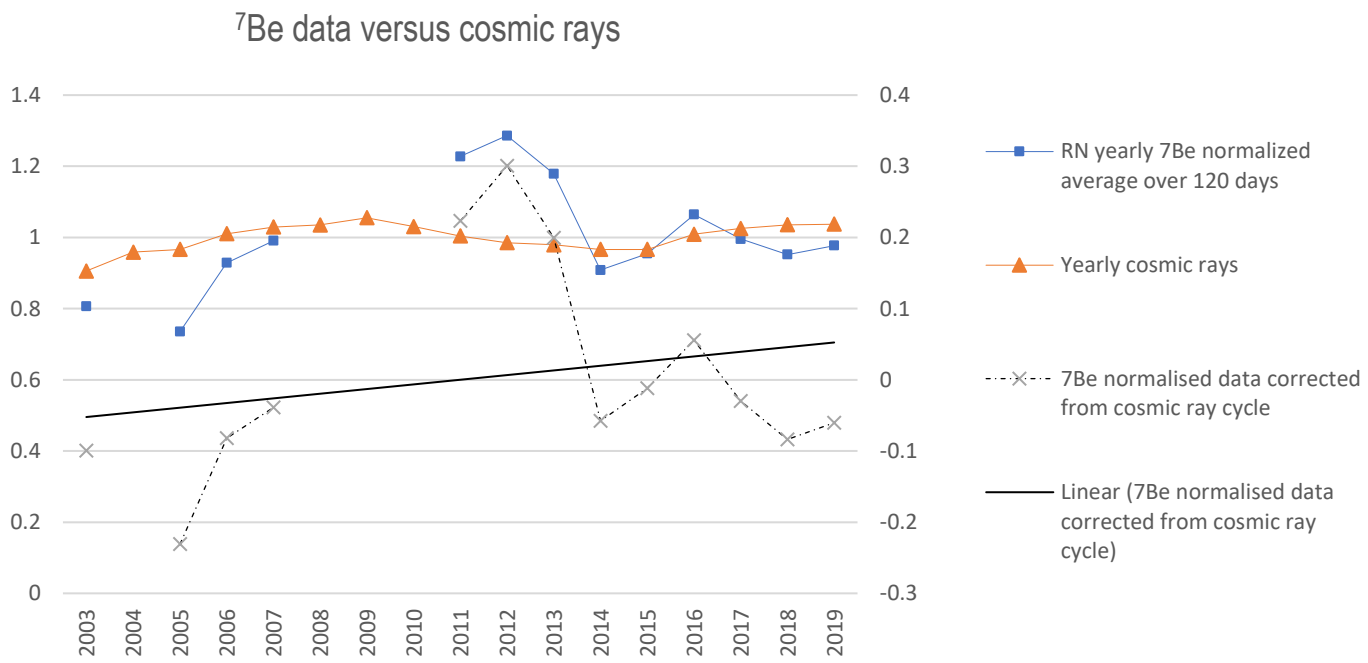

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

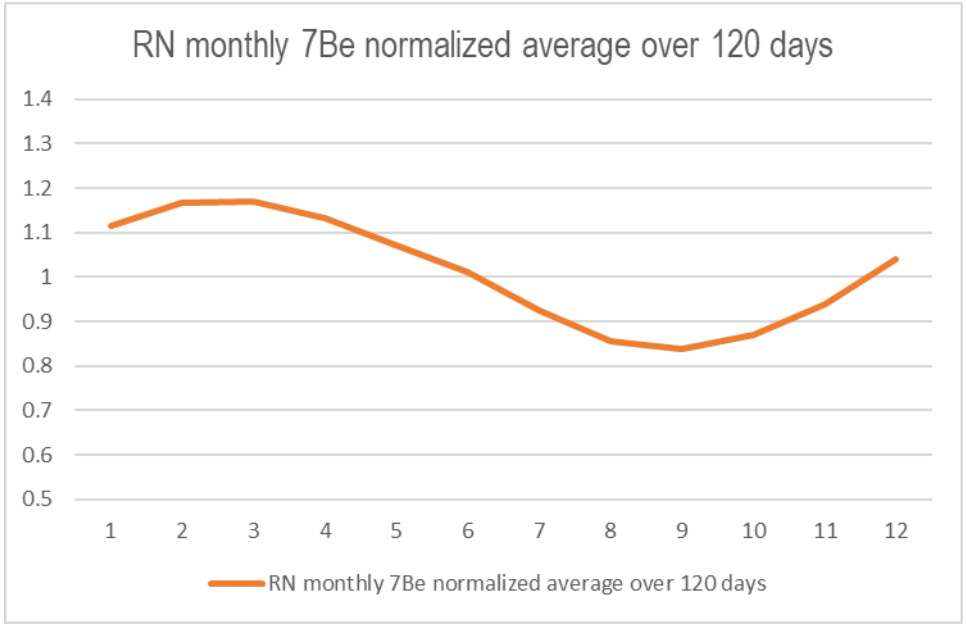
RN18


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

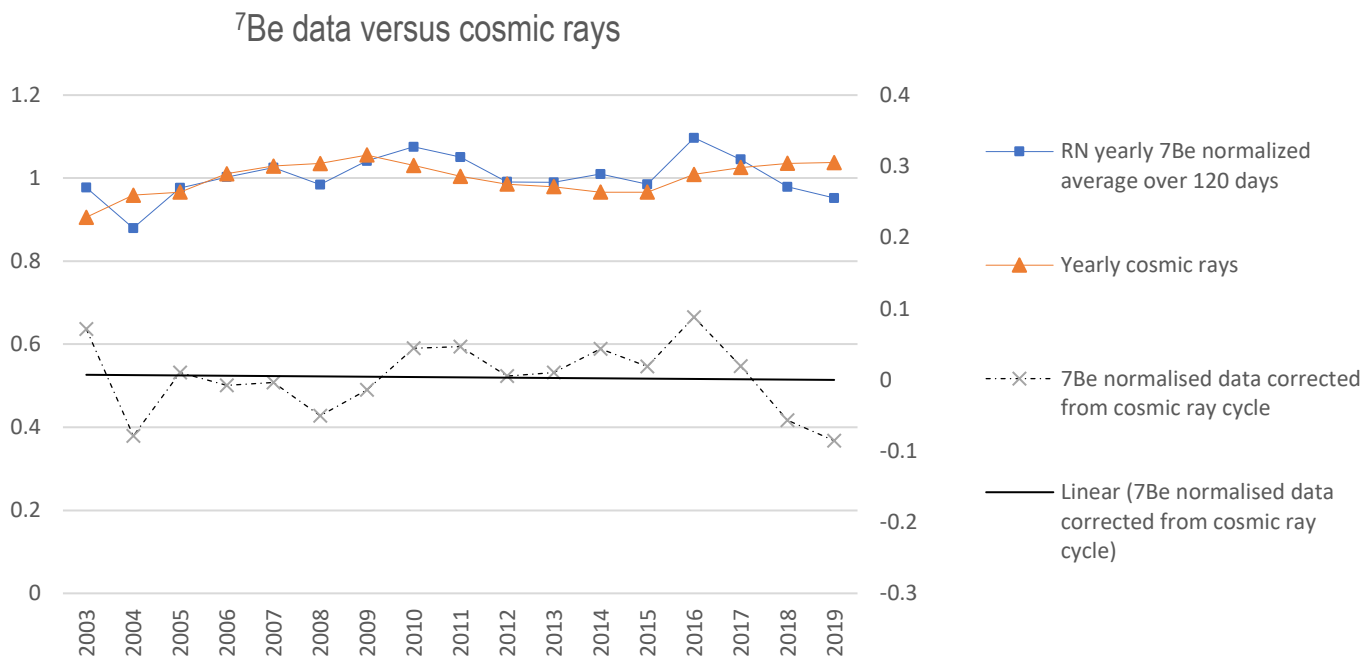

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

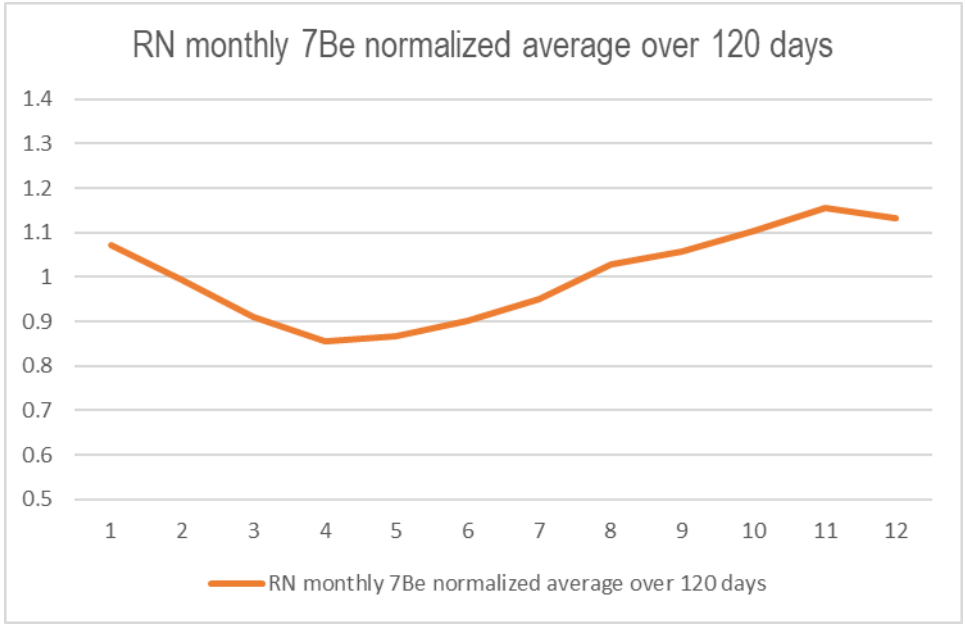
RN19


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

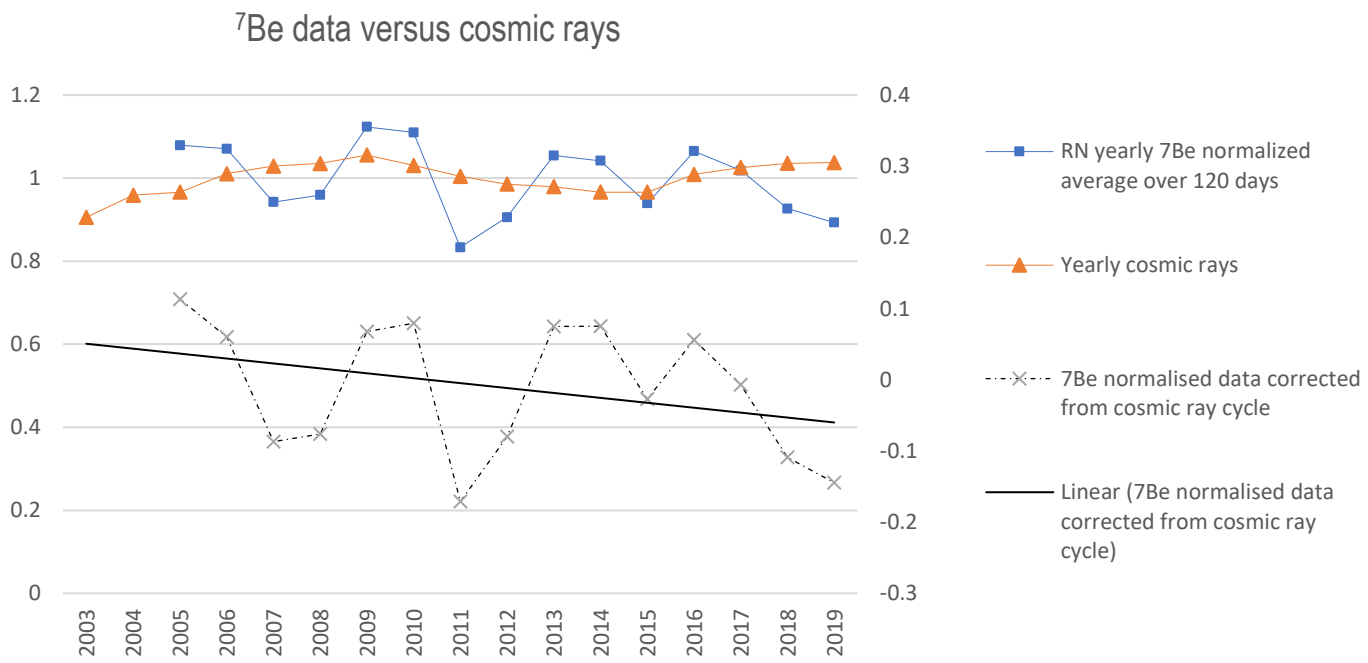

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

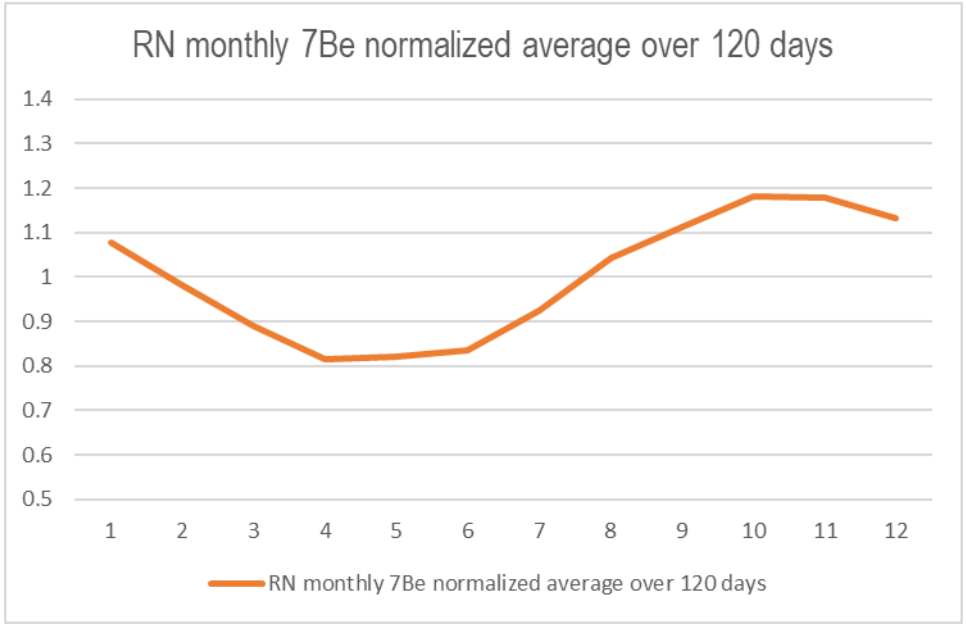
RN23


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

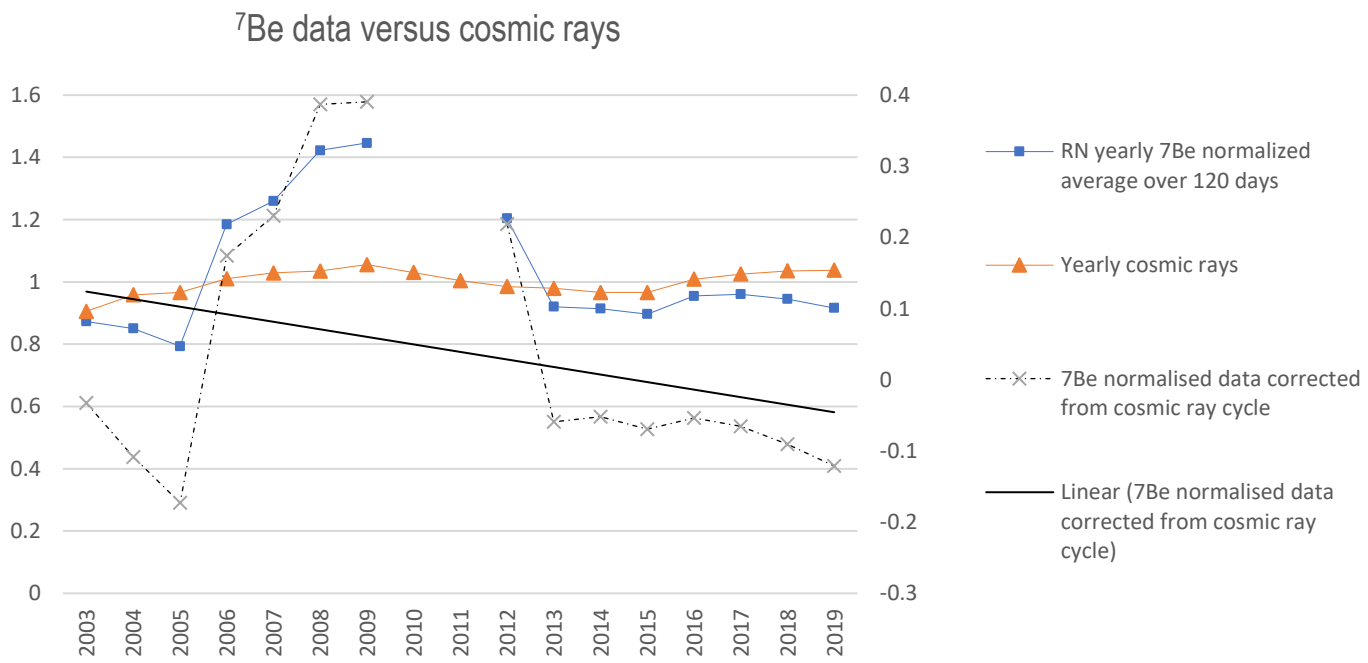

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

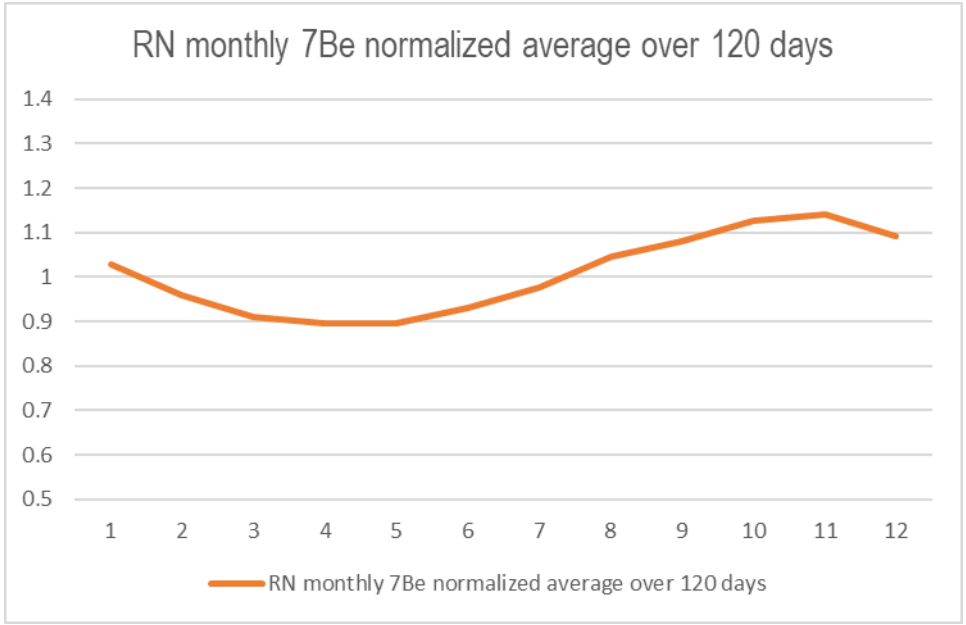
RN26


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

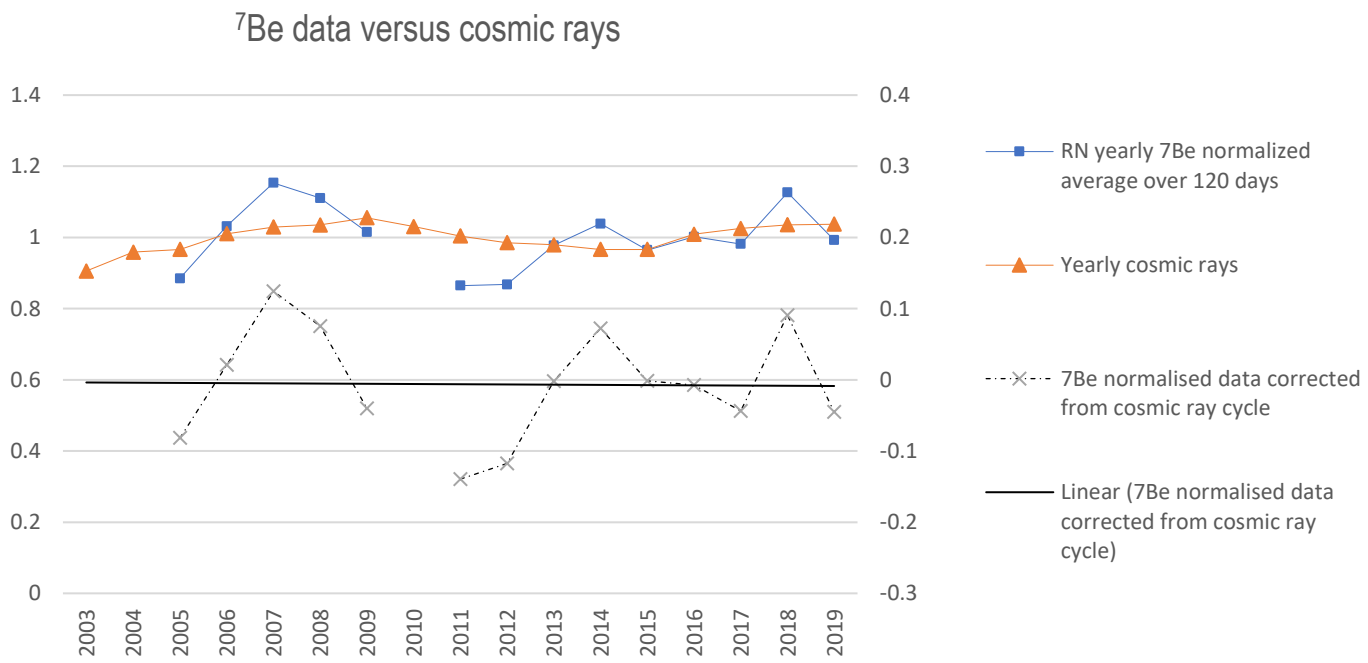

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

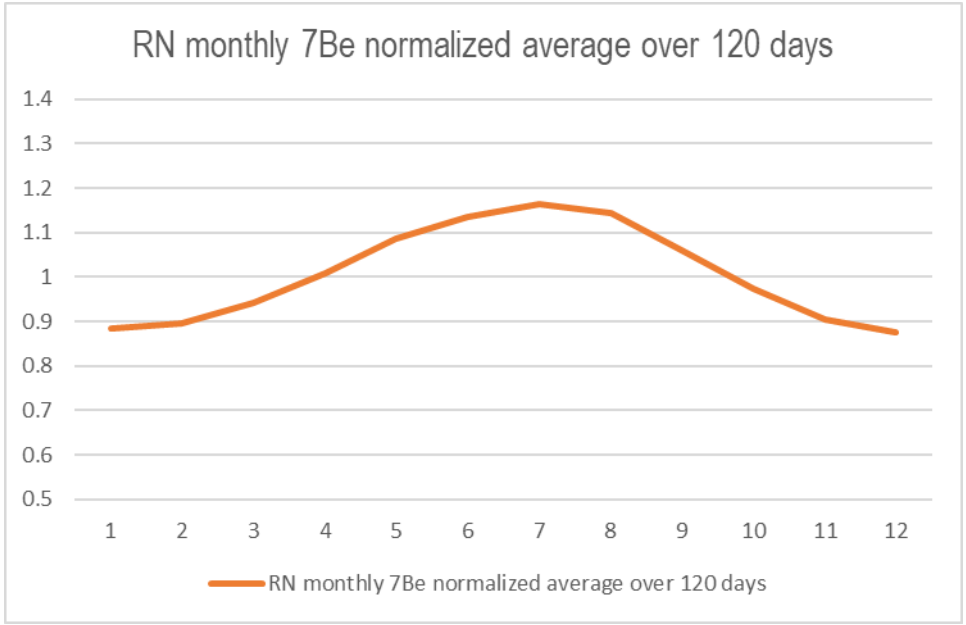
RN27


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

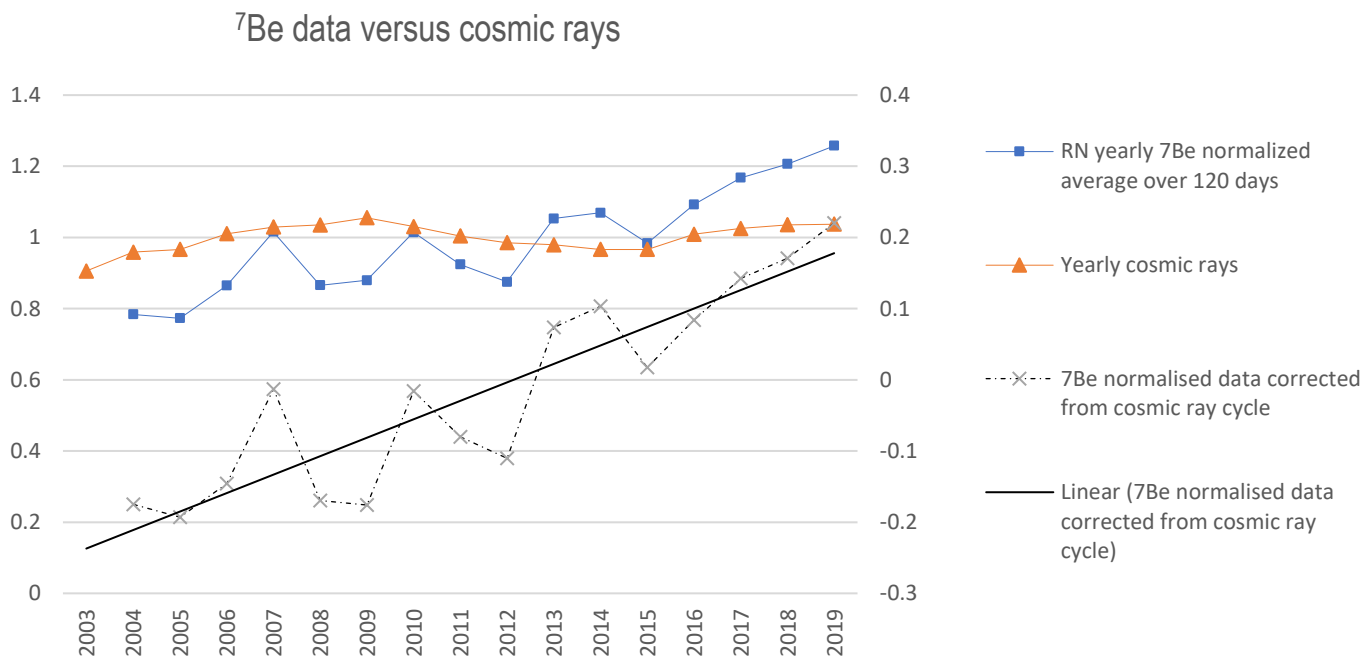

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN28


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN29


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
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2006
2007
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2009
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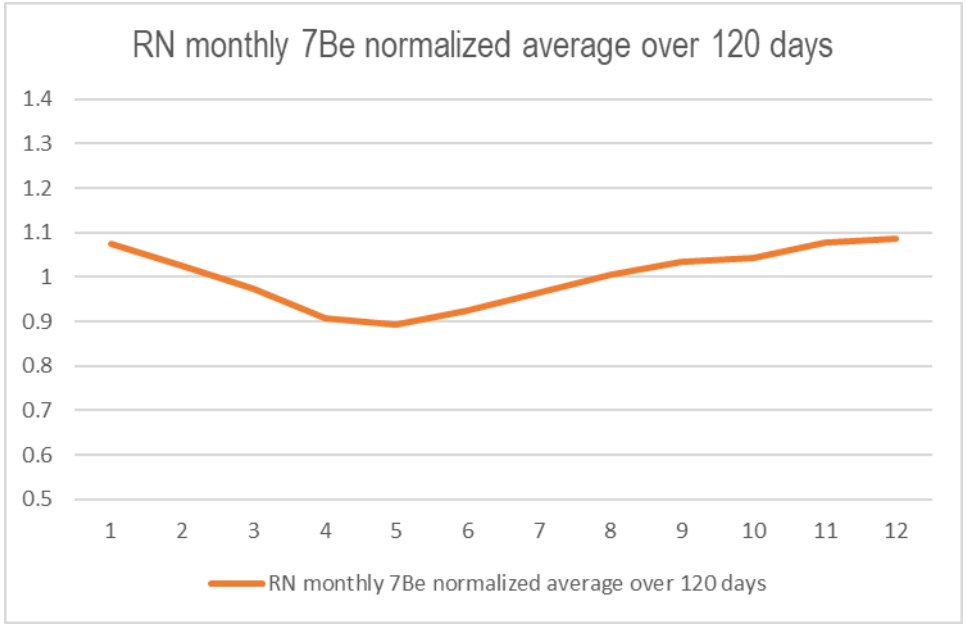
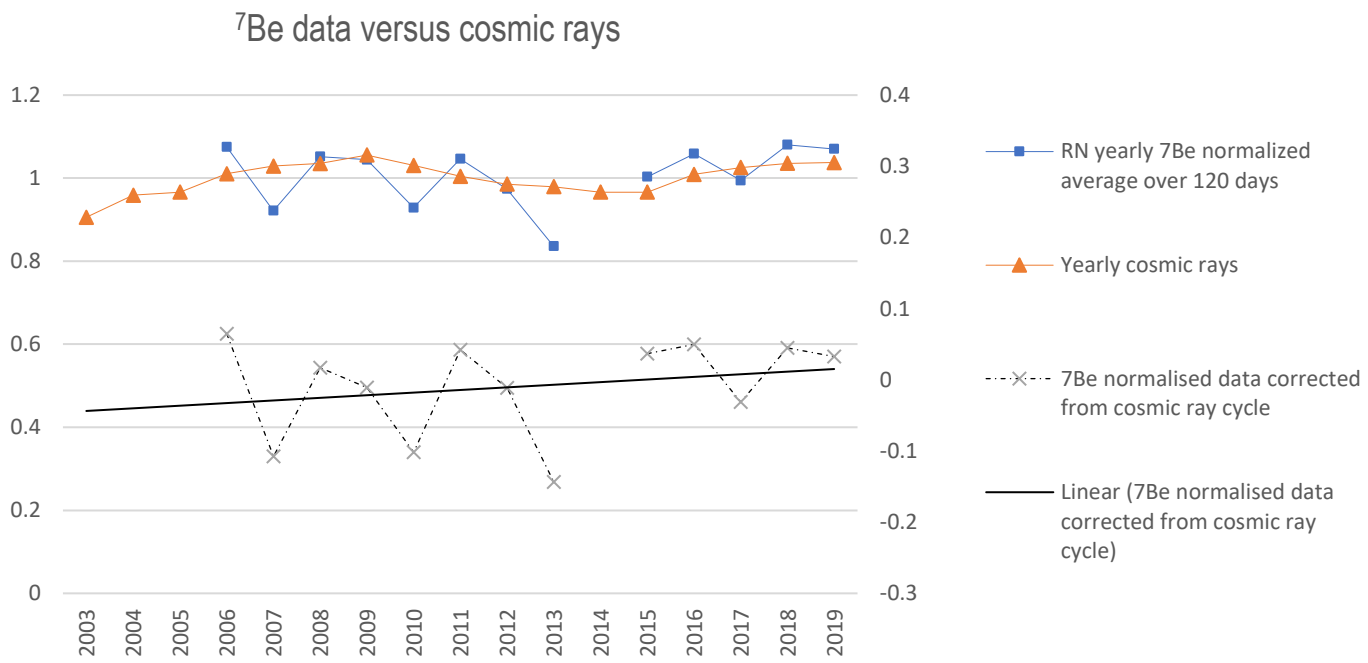
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN30


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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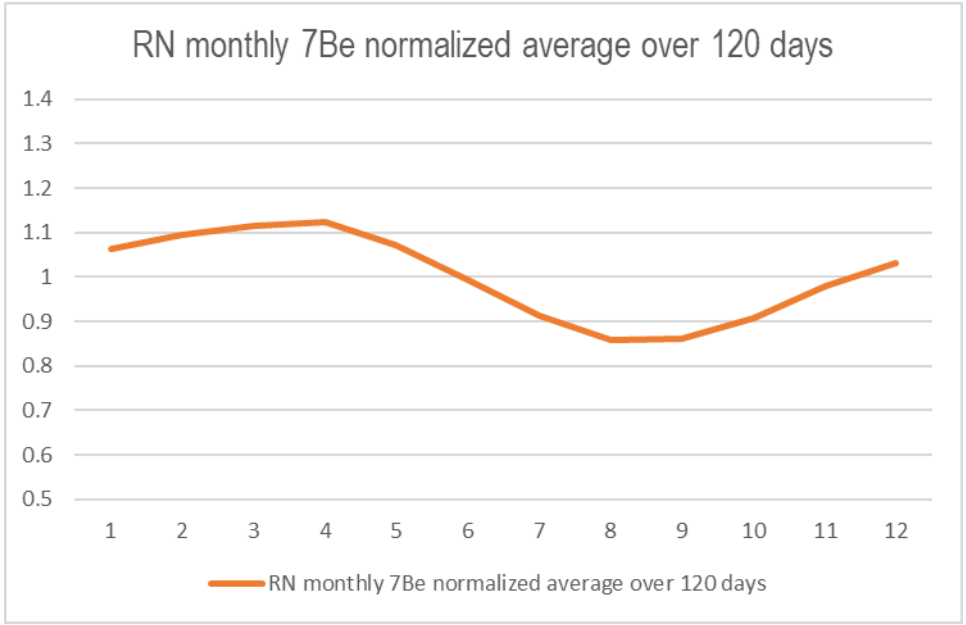
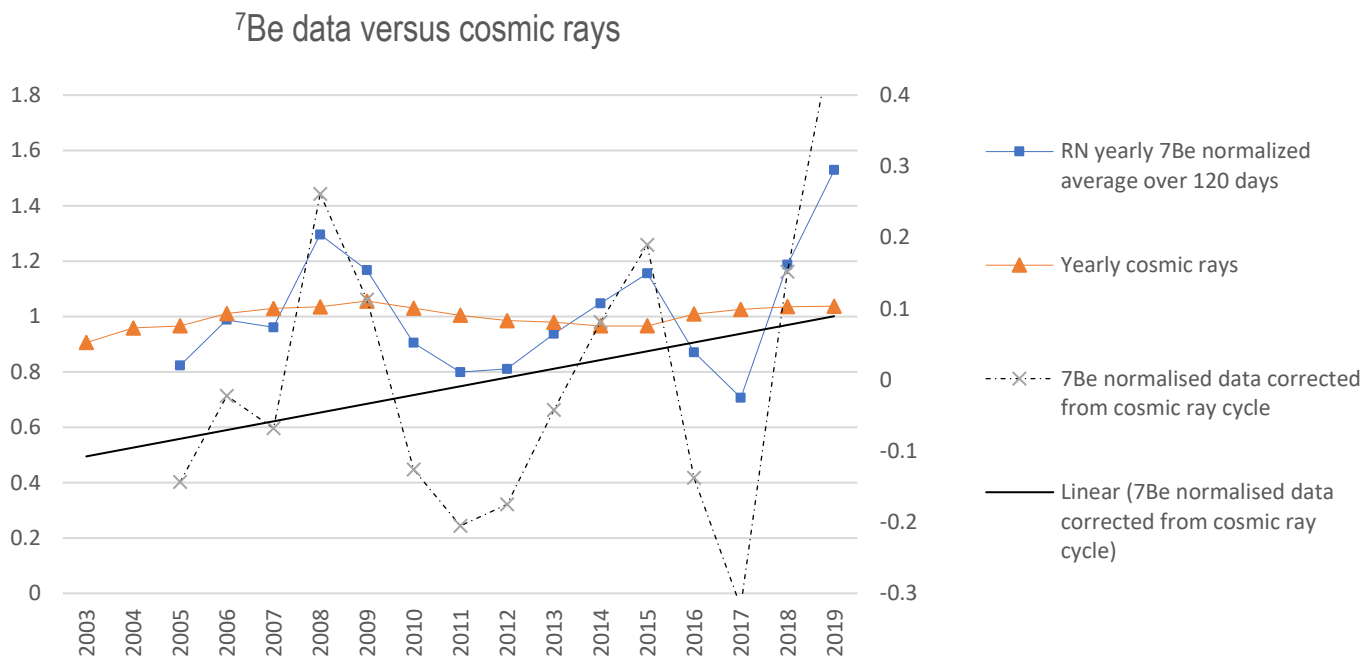
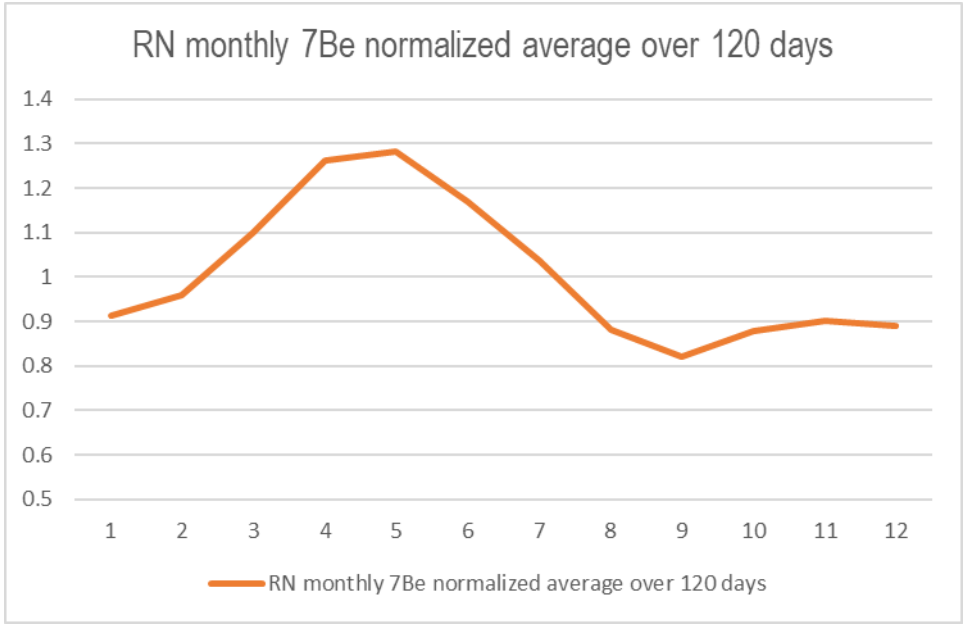
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

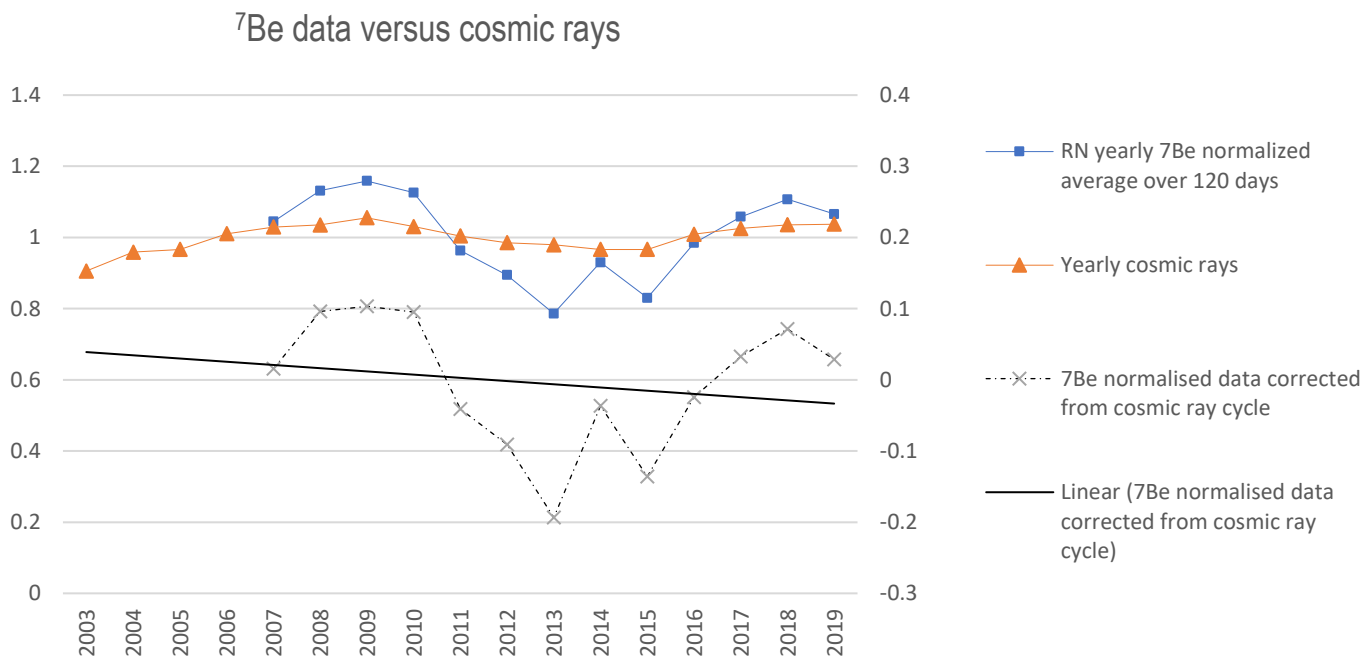

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

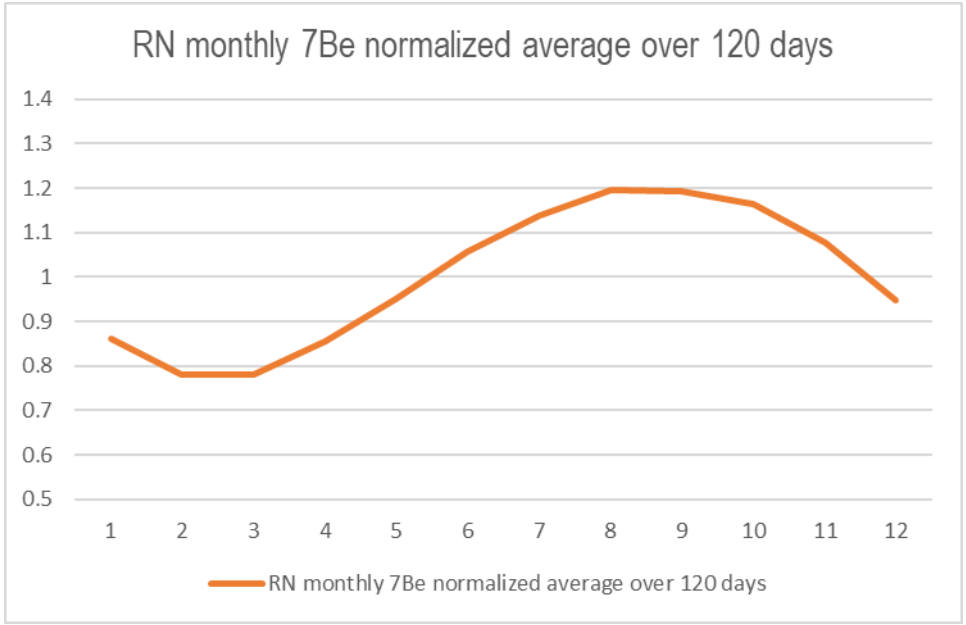
RN31


7Be data versus cosmic rays
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

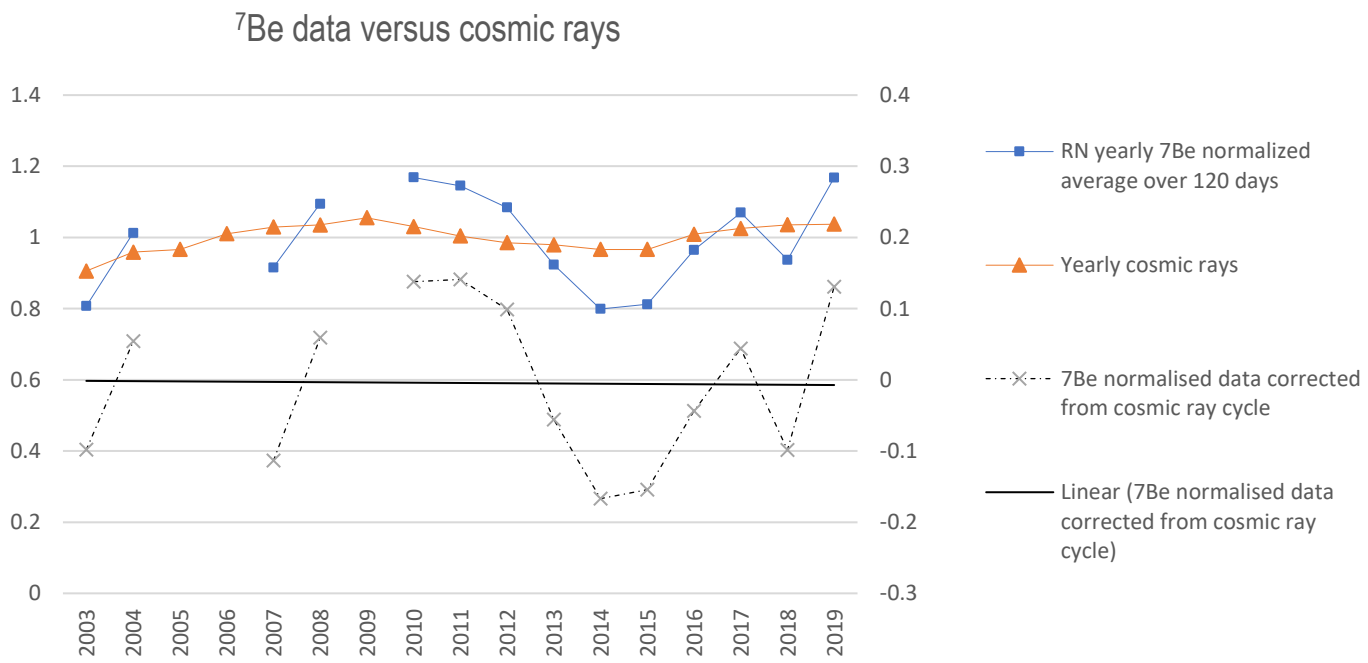

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

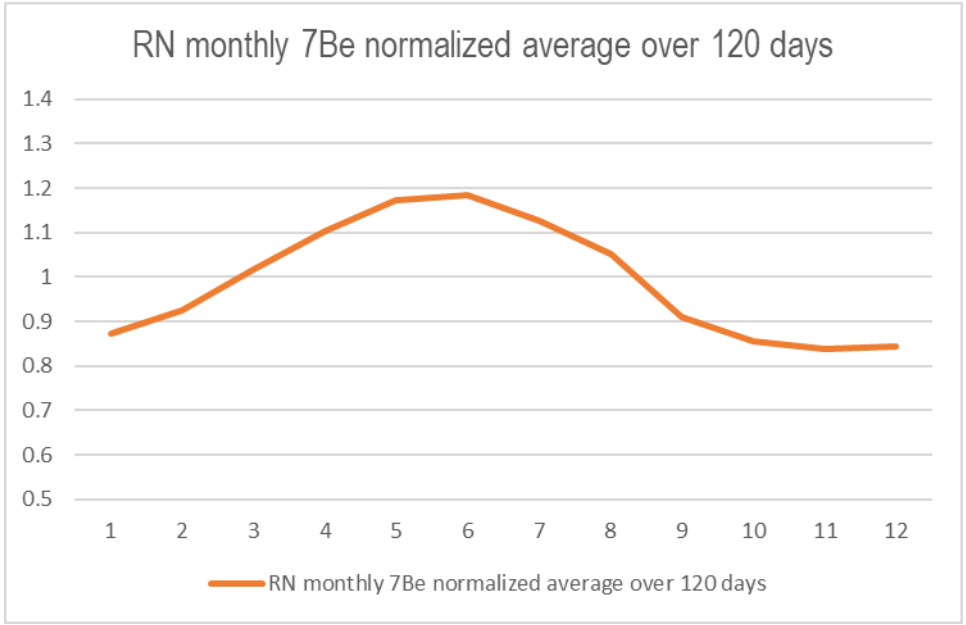
RN33


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

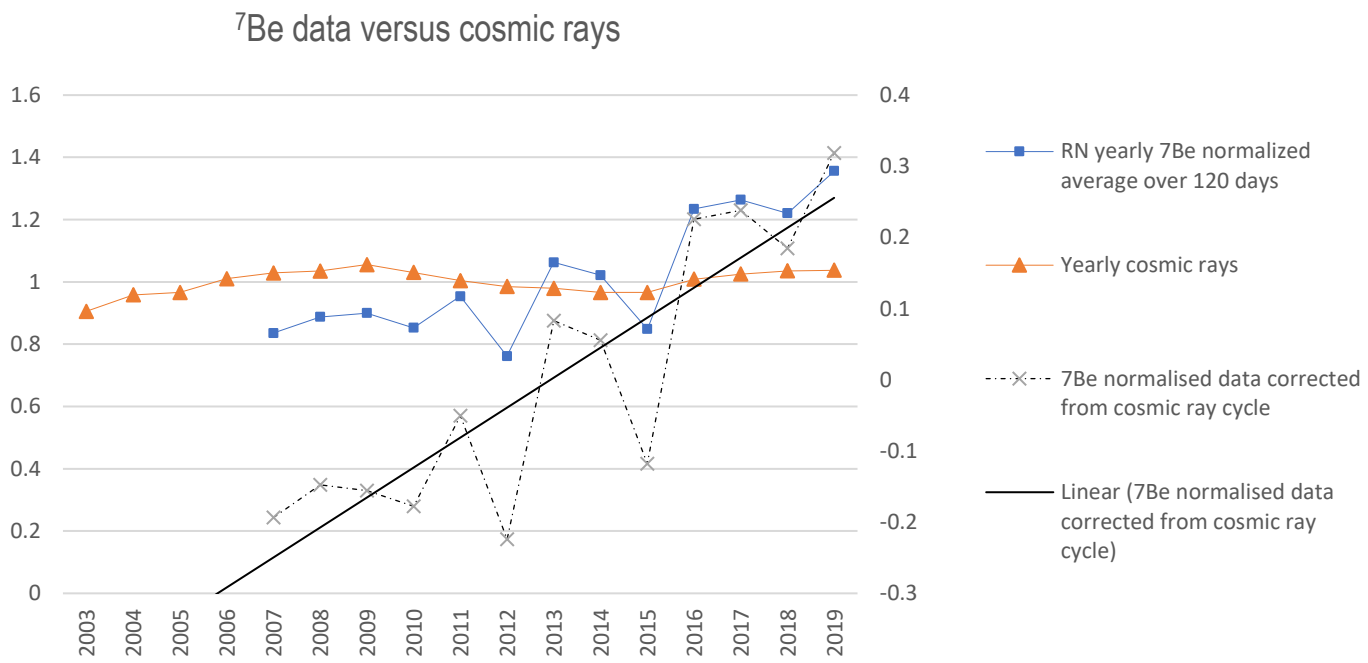

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

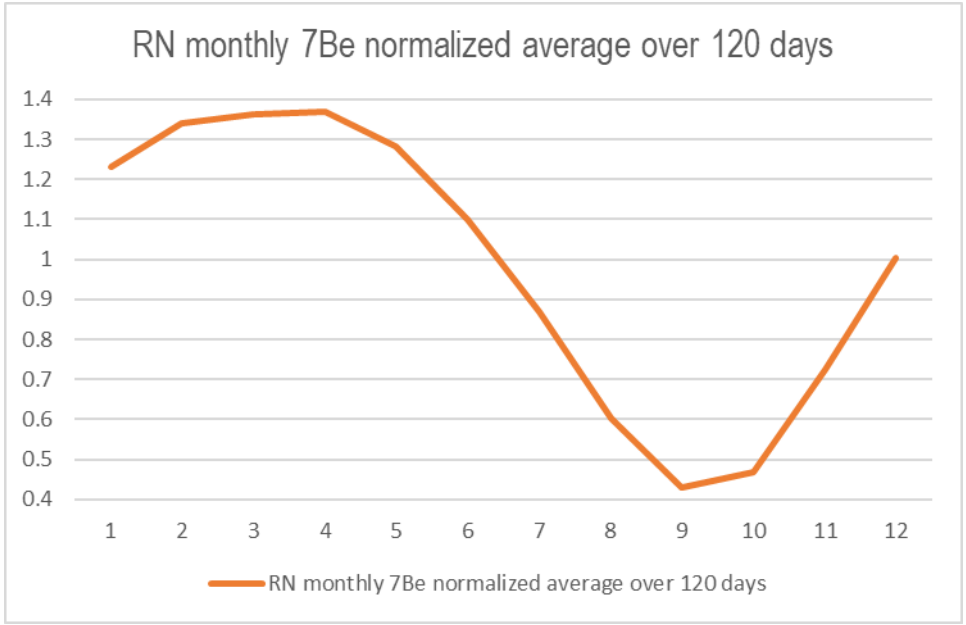
RN34


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

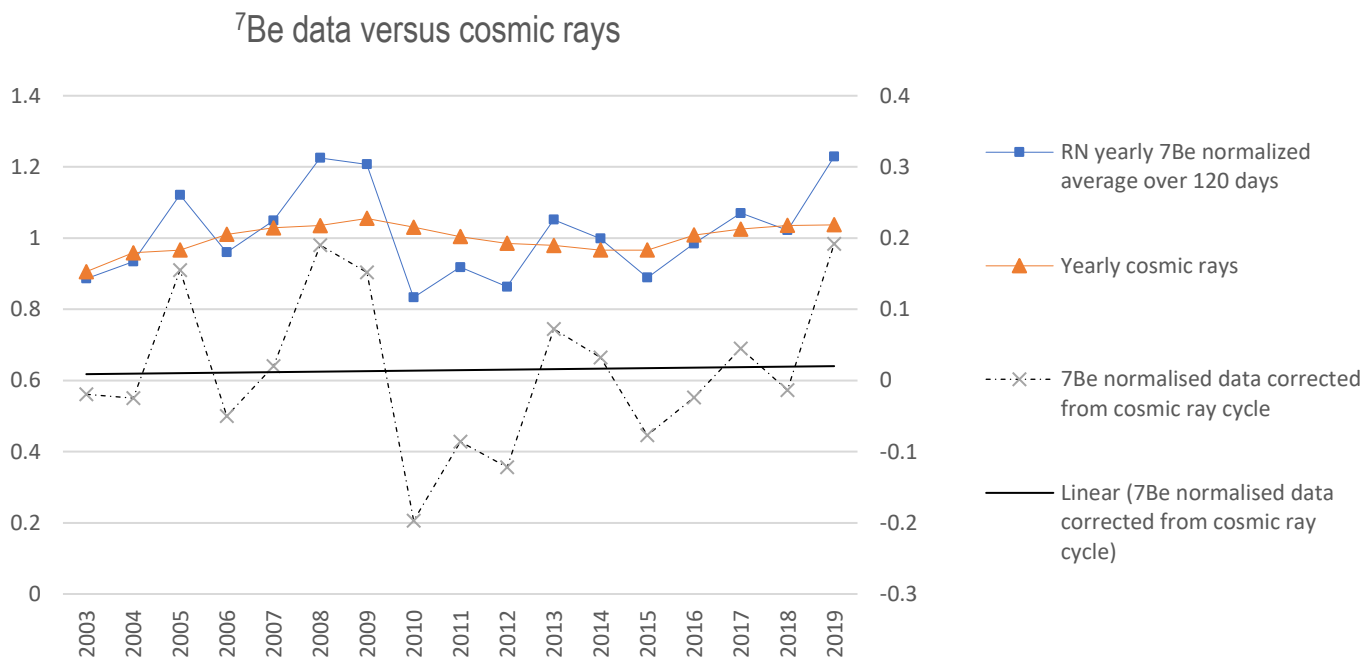

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN37


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN38


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
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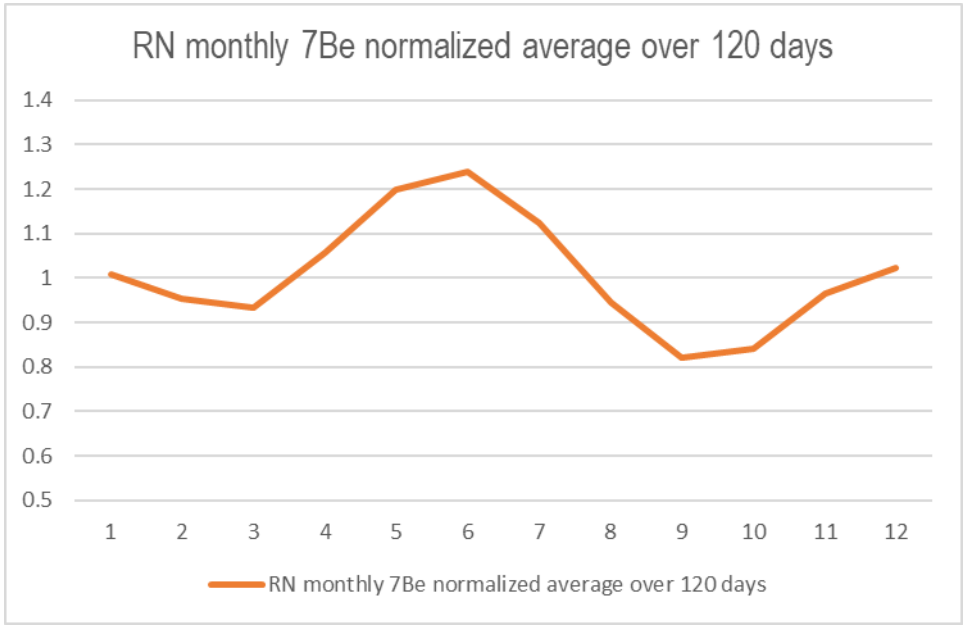
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
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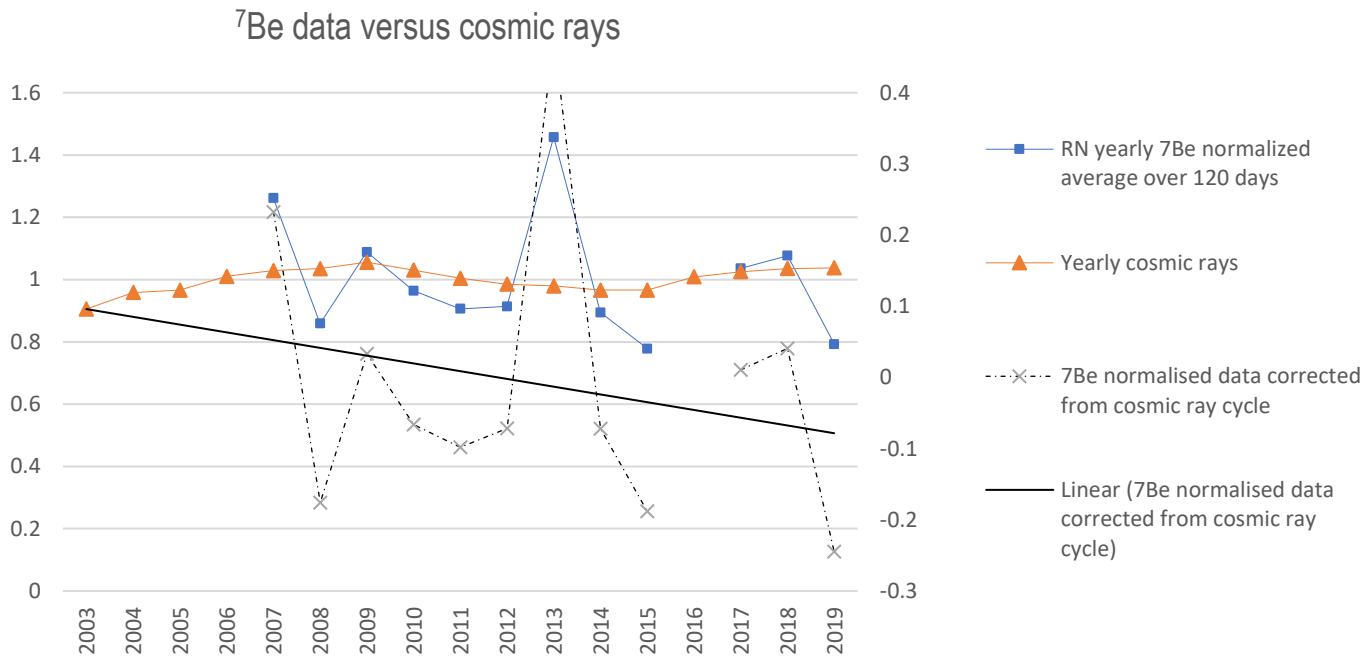
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN39


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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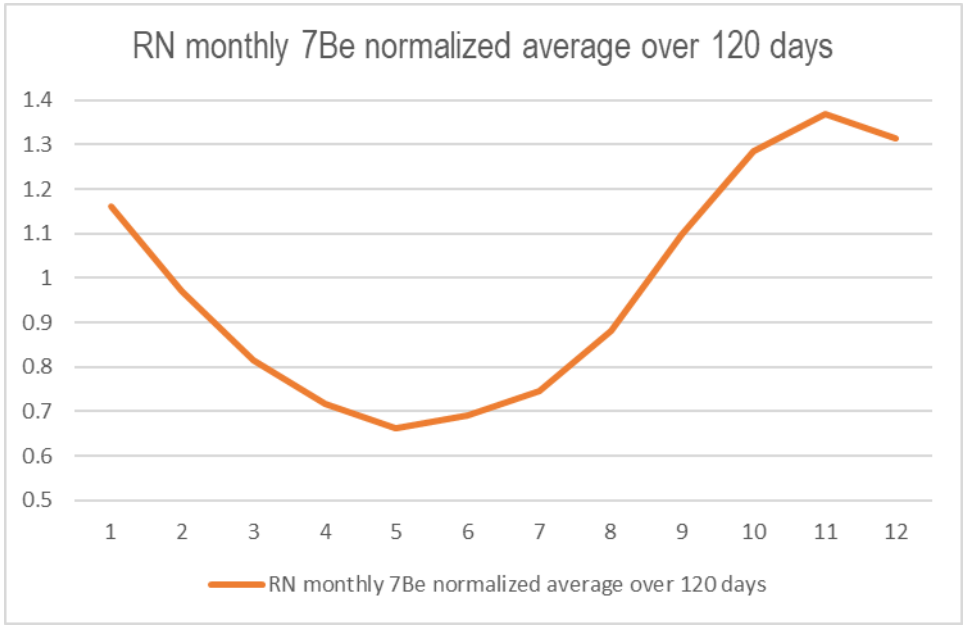
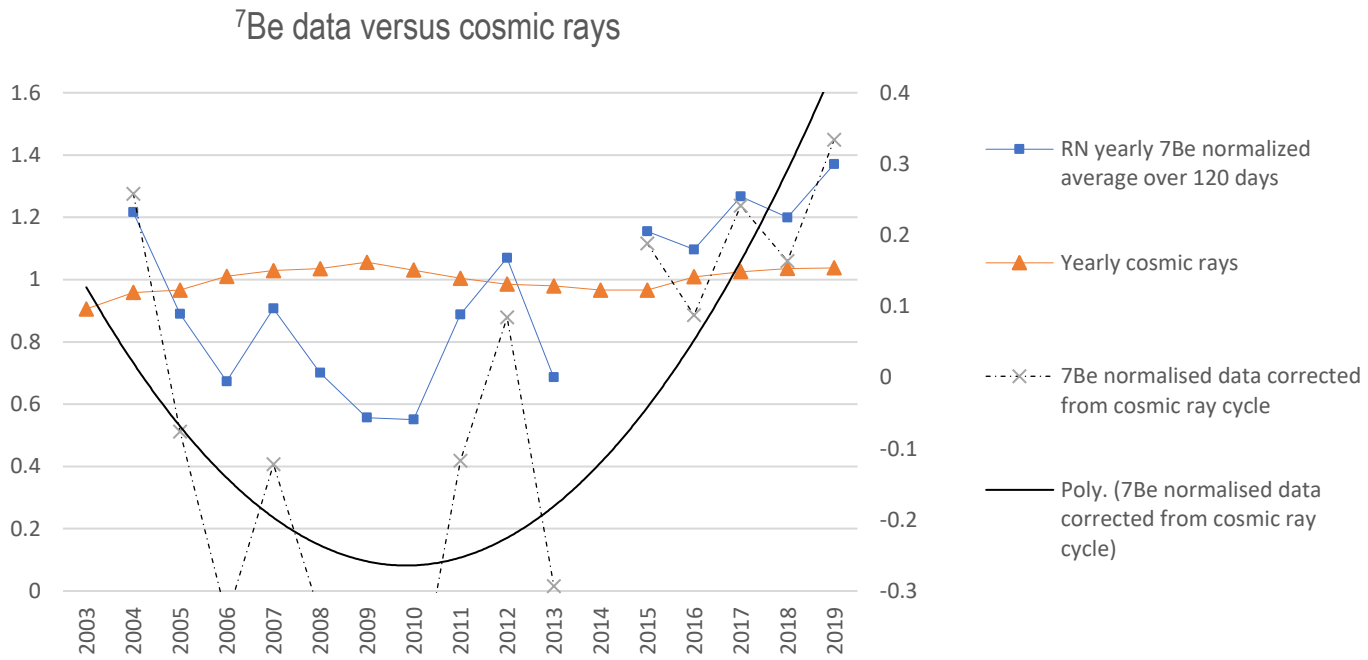
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN40


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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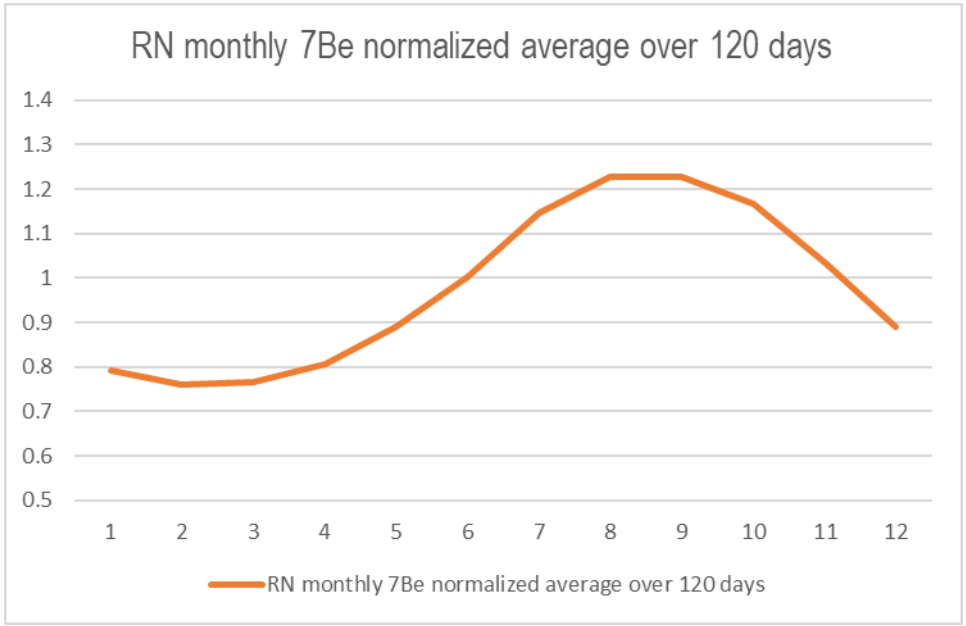
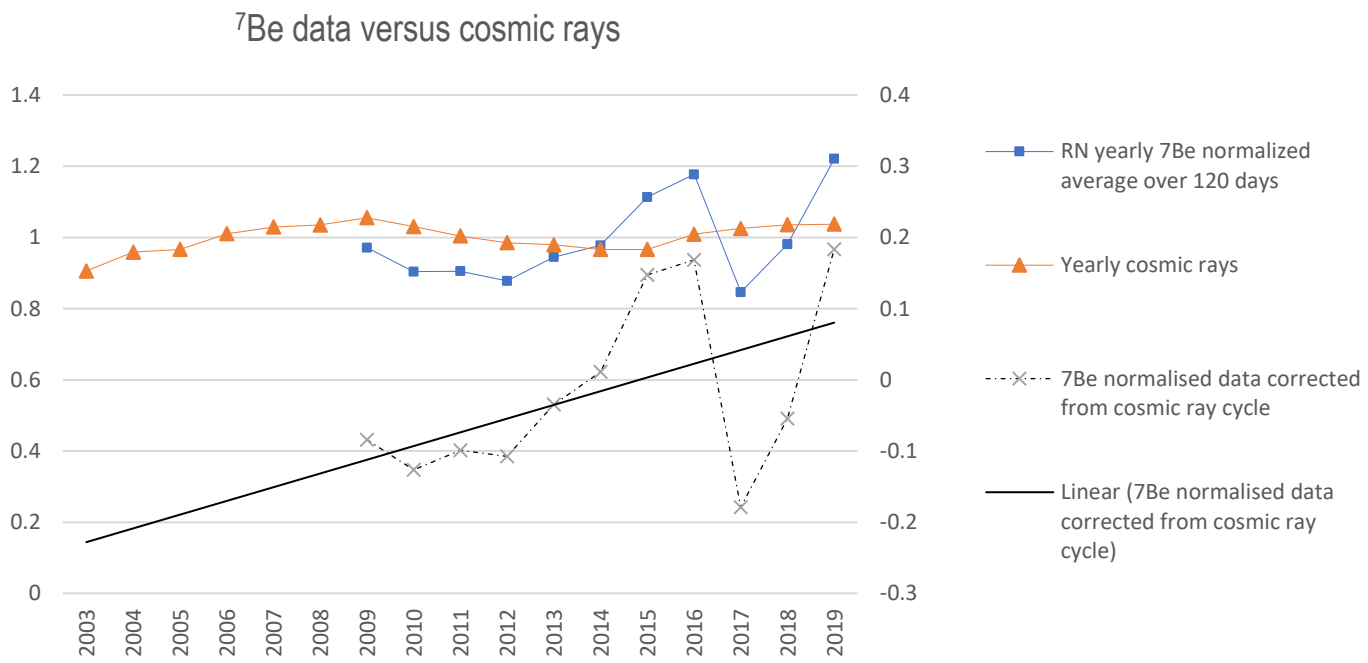
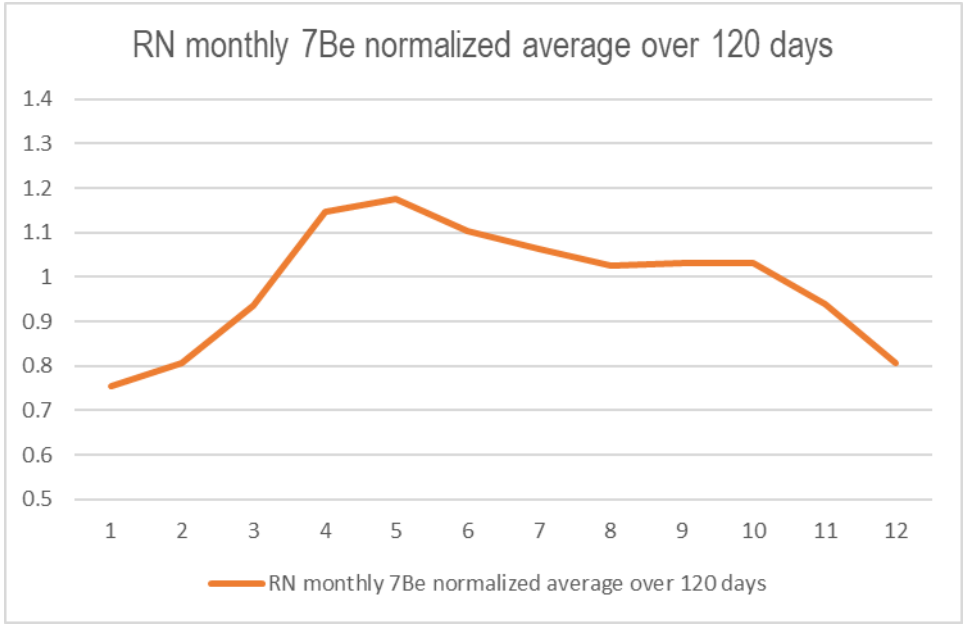
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Poly. (7Be normalised data corrected from cosmic ray cycle)

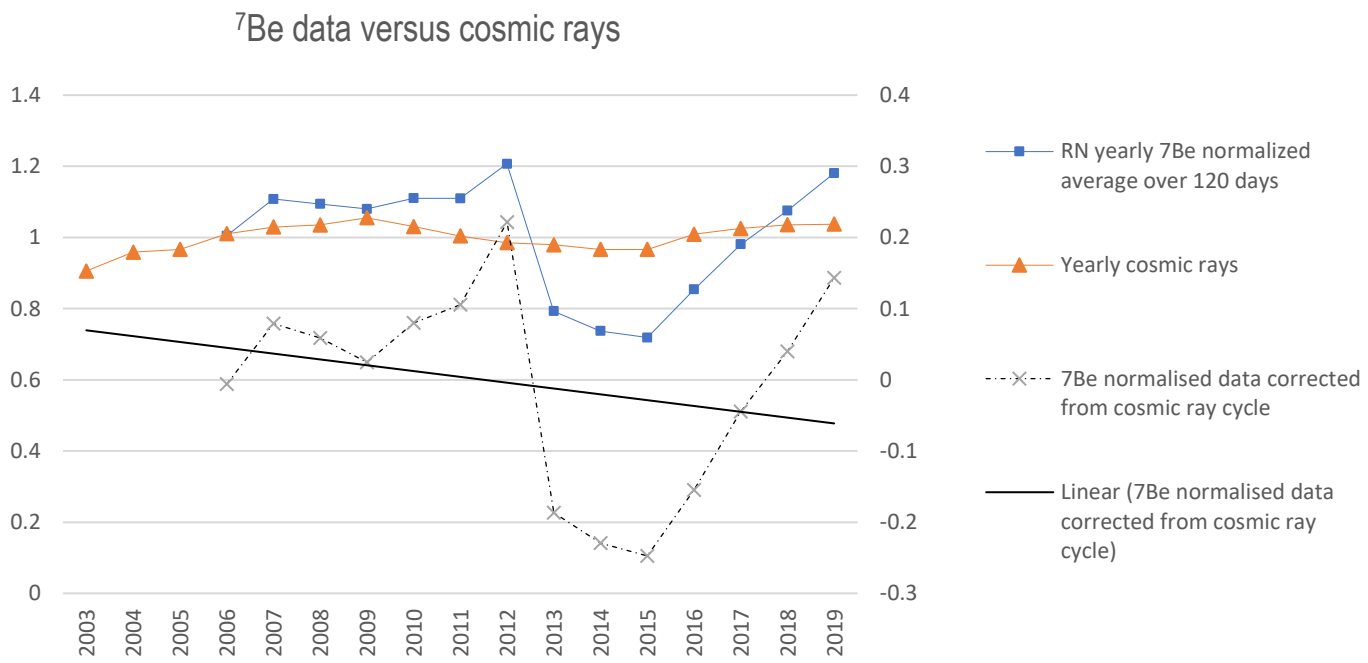

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

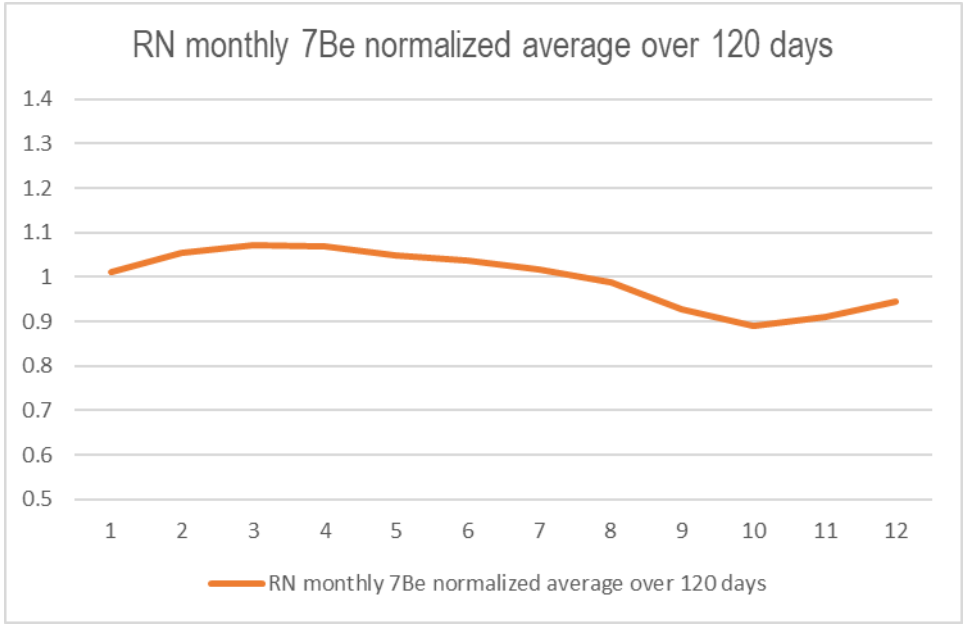
RN42


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

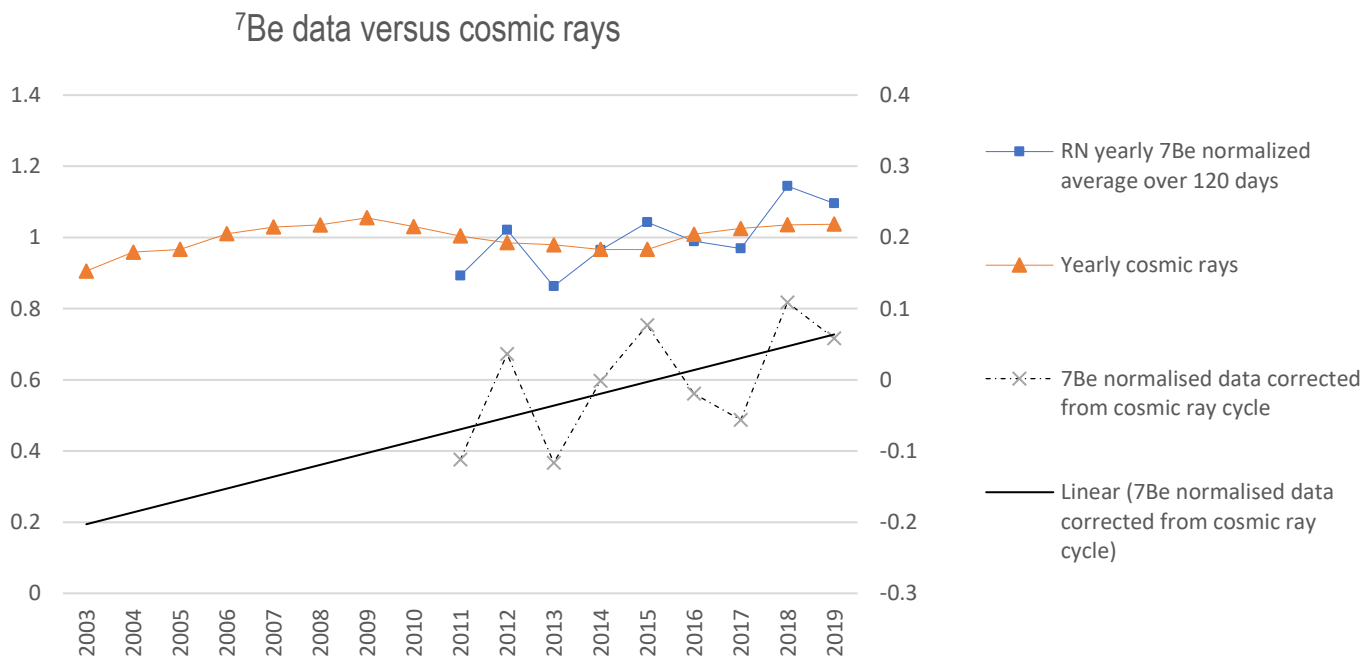

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

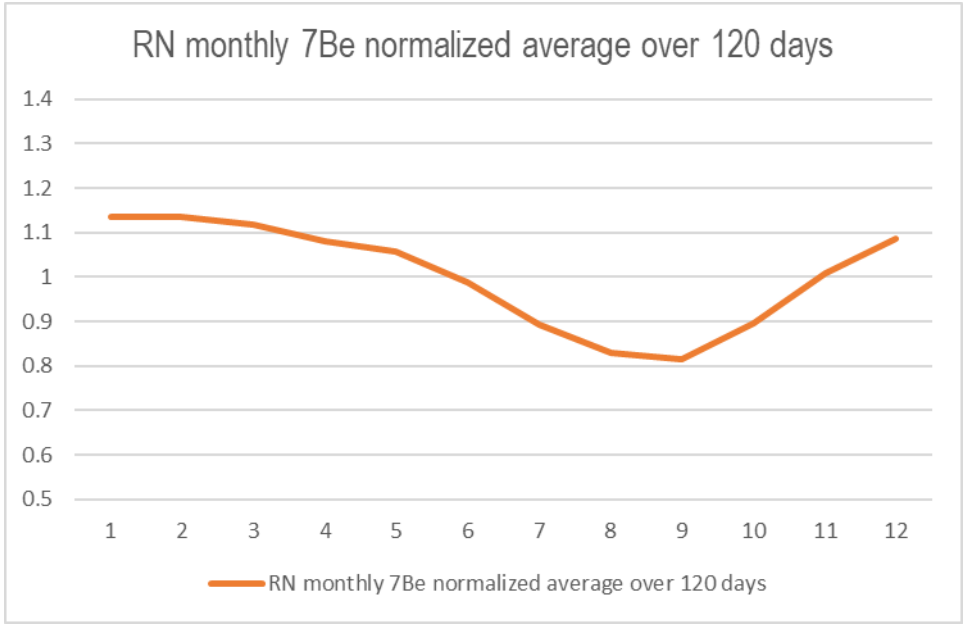
RN43


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

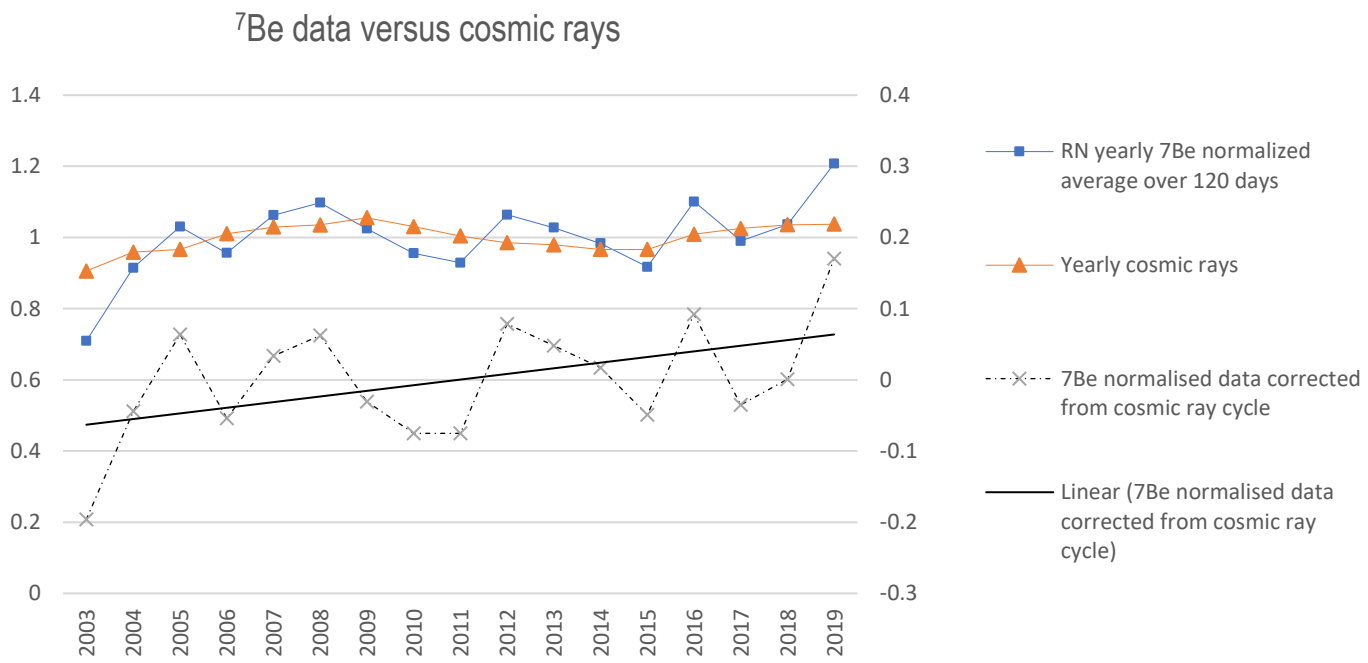

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

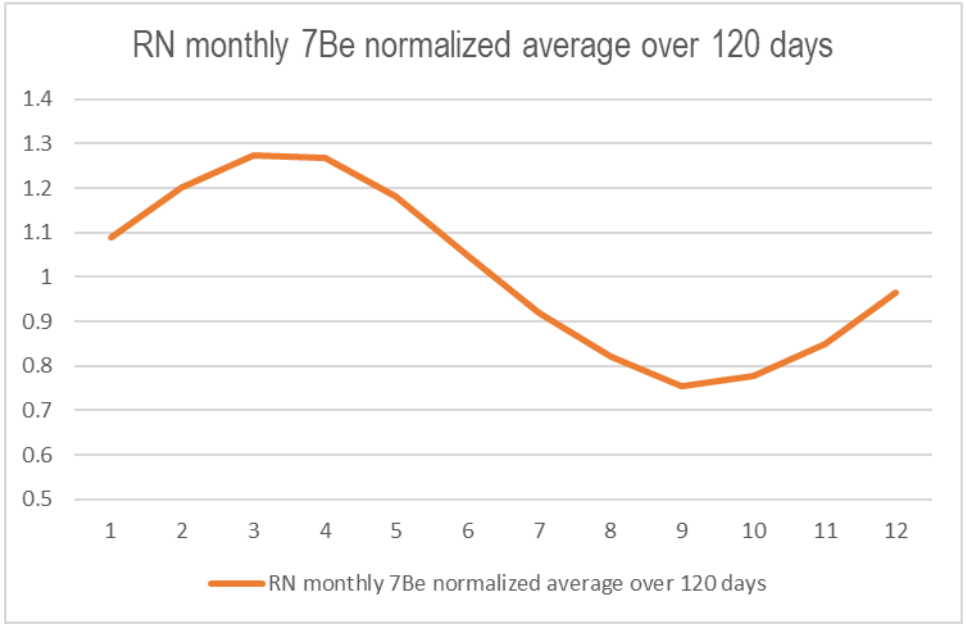
RN44


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

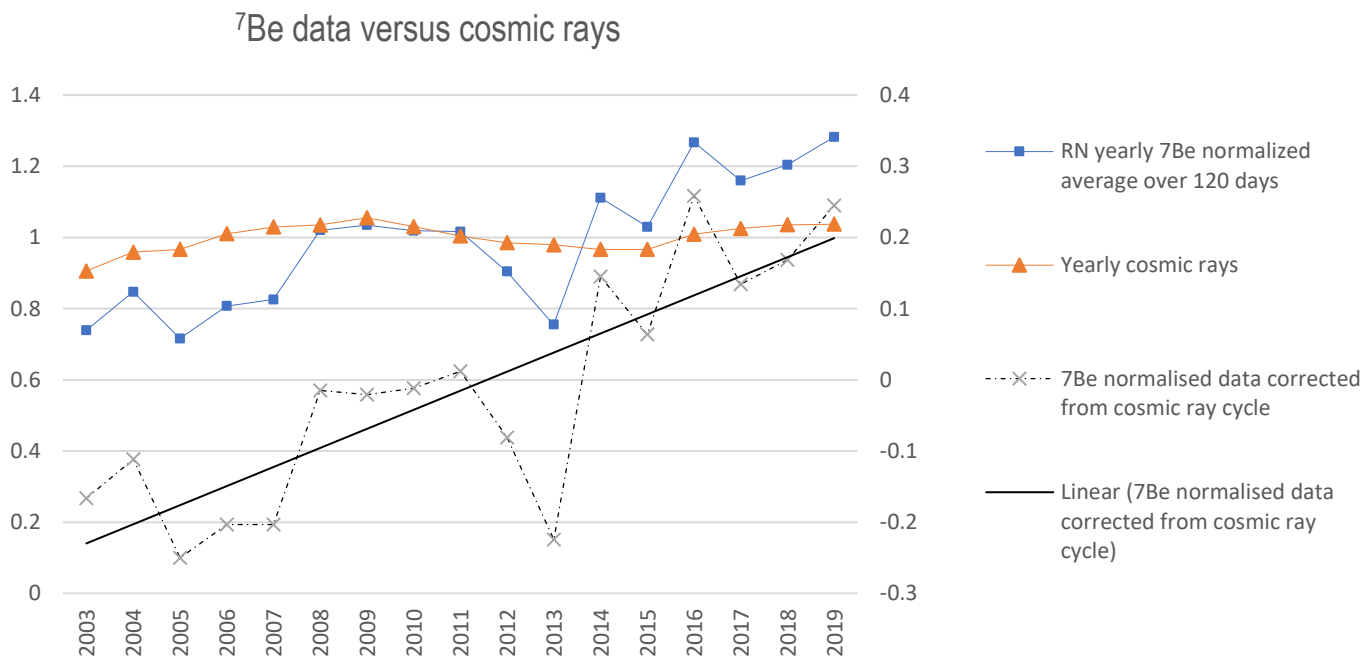

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

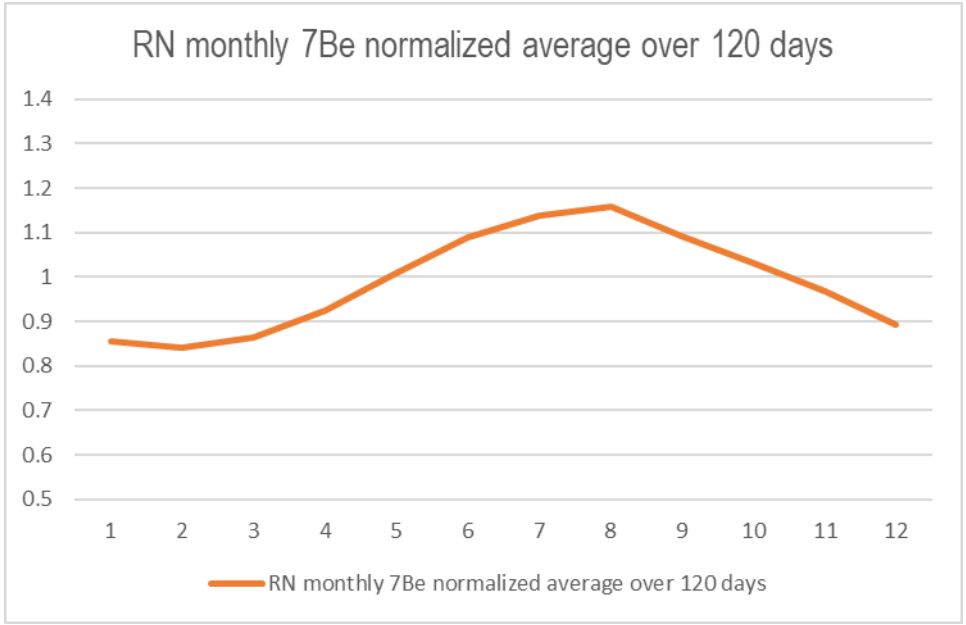
RN45


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

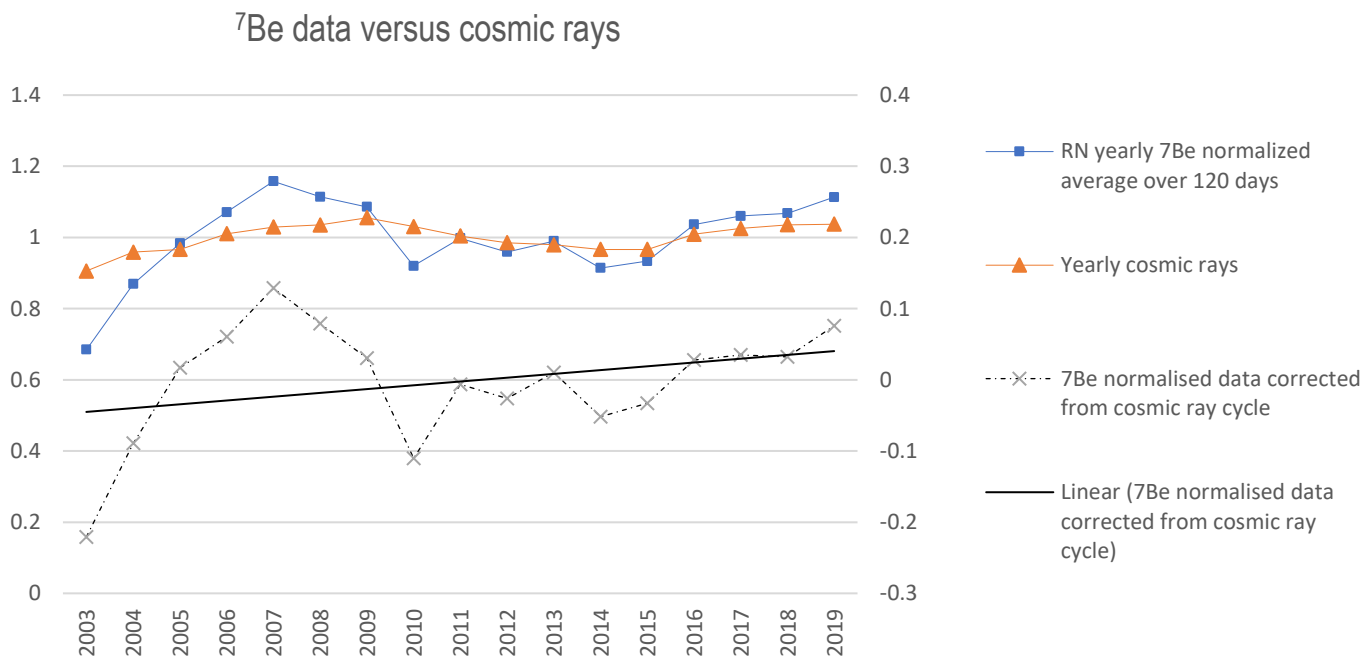

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

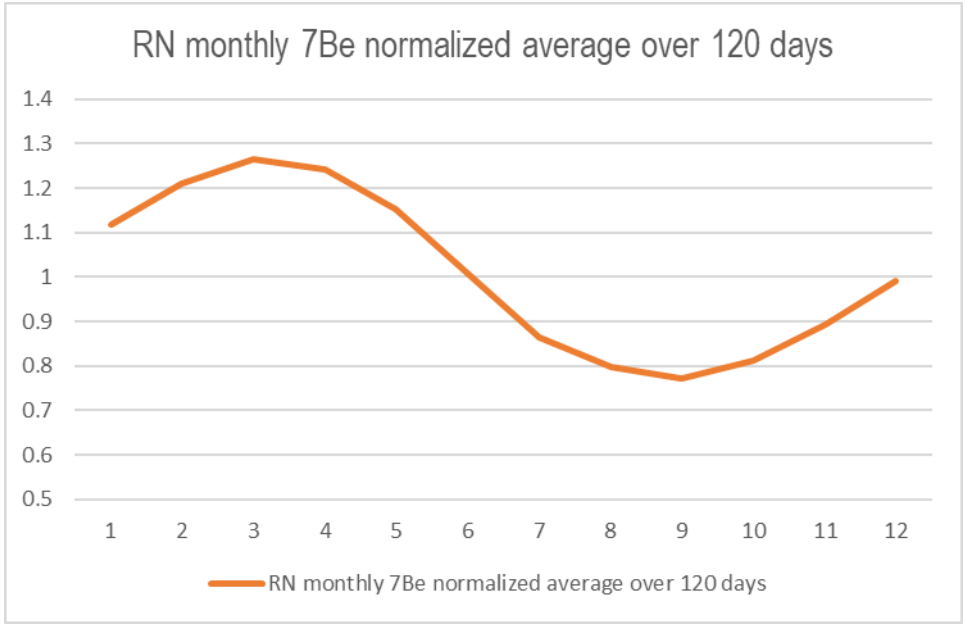
RN46


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

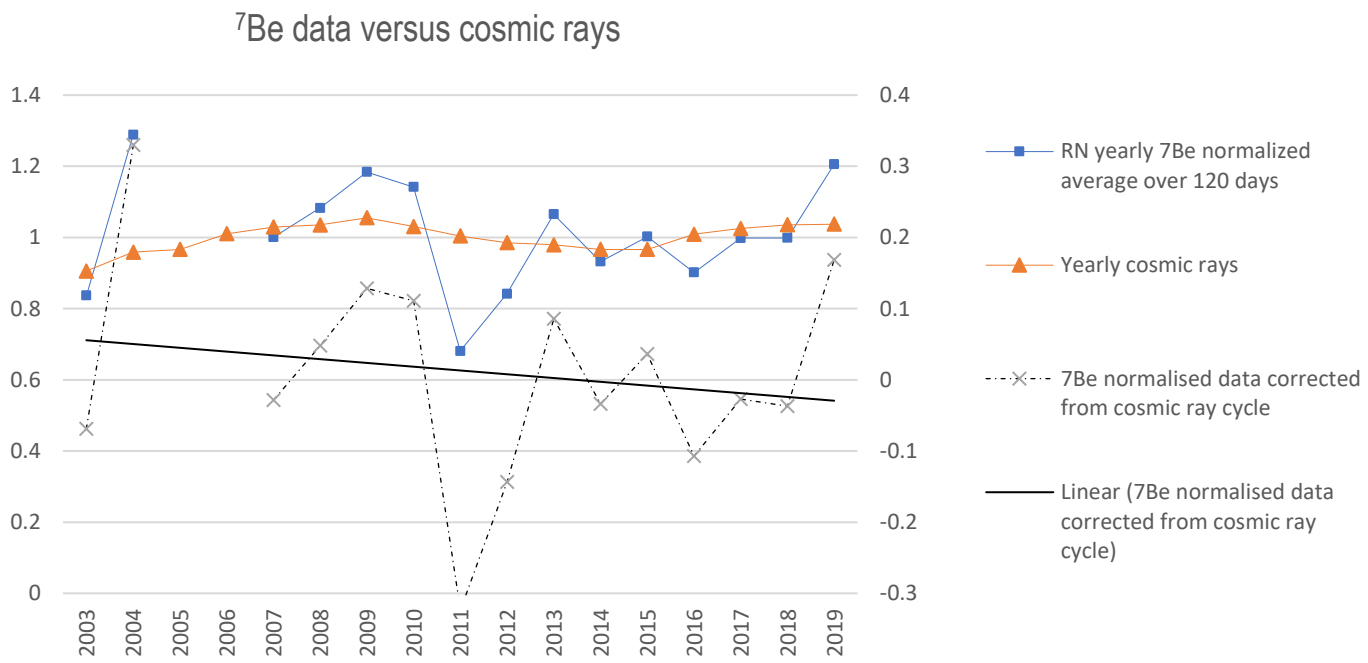

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

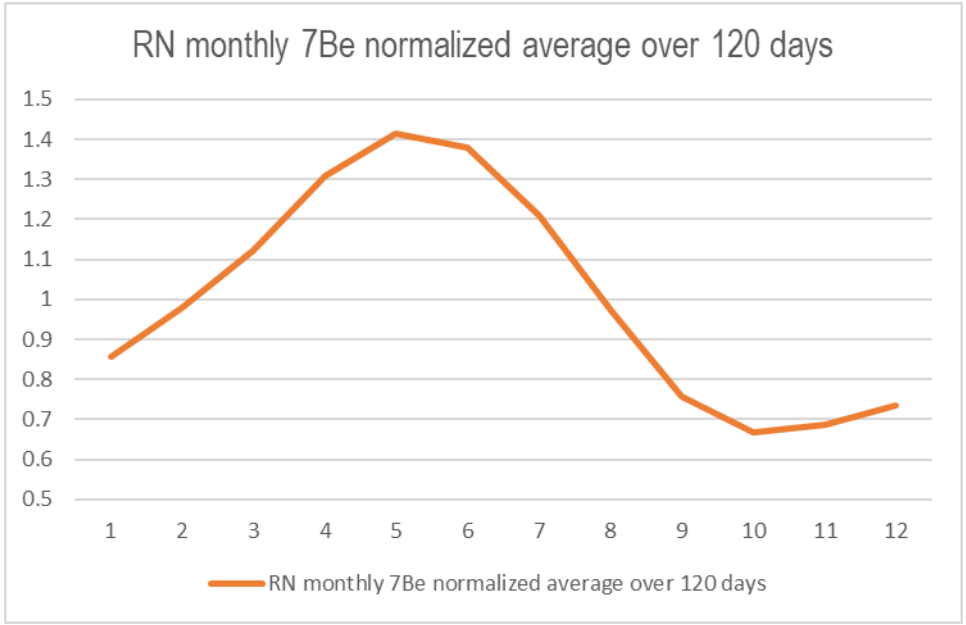
RN47


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

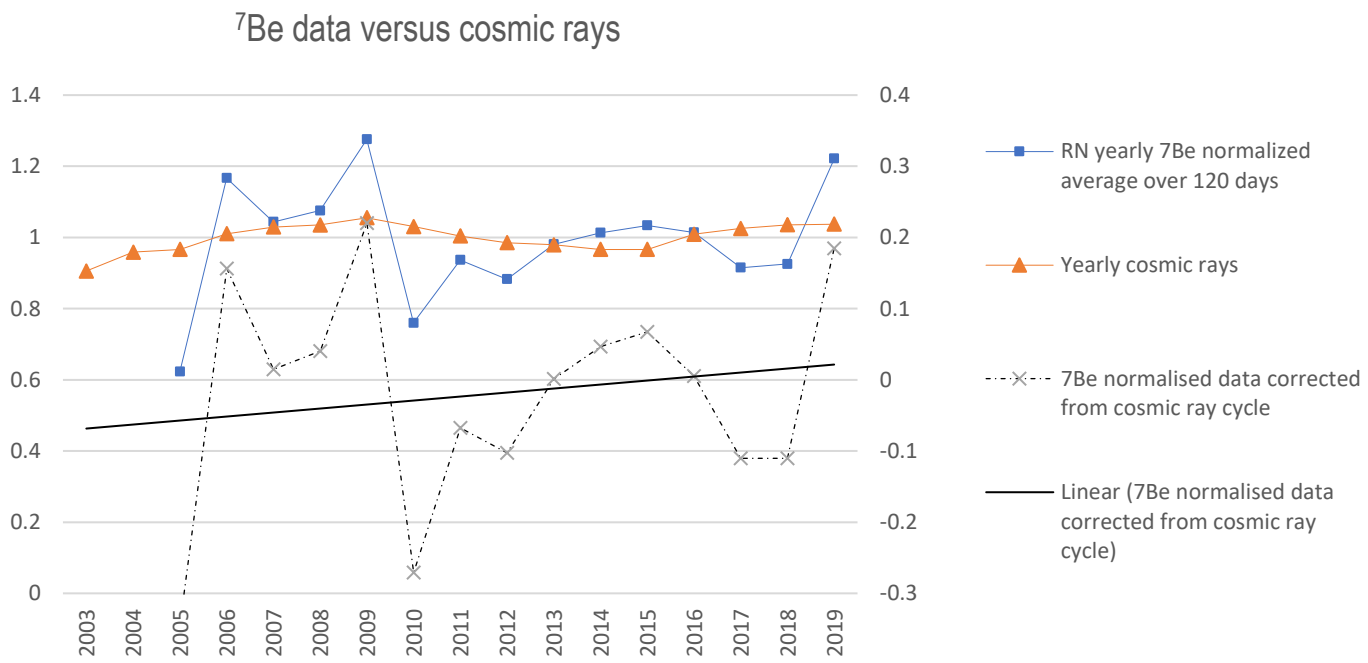

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

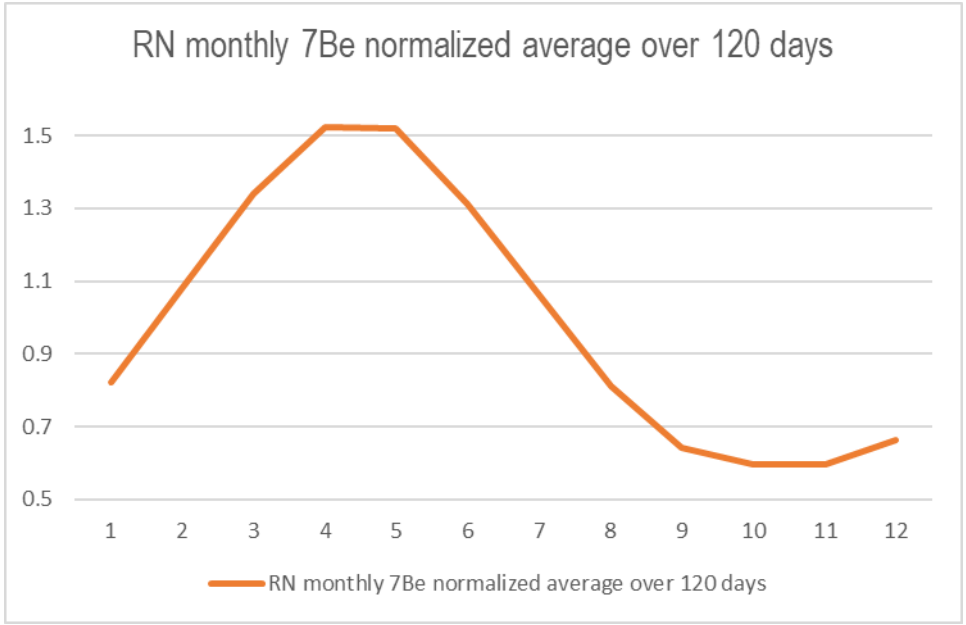
RN49


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

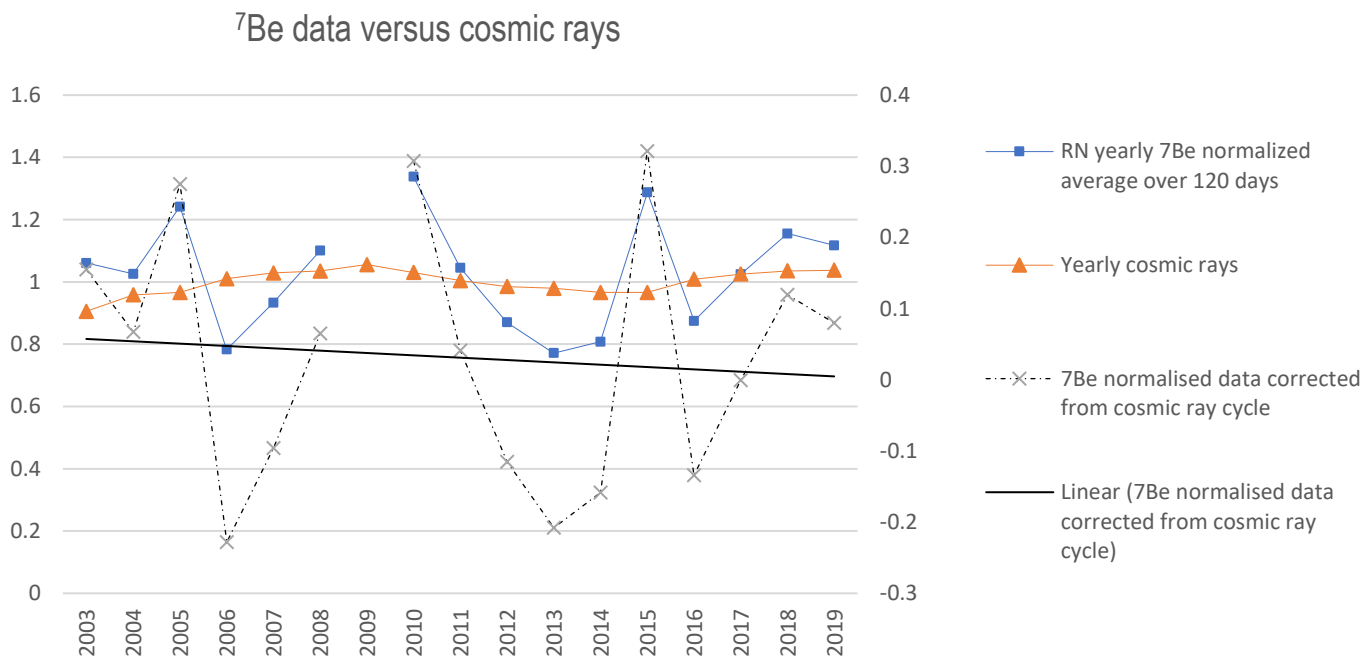

RN monthly 7Be normalized average over 120 days
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

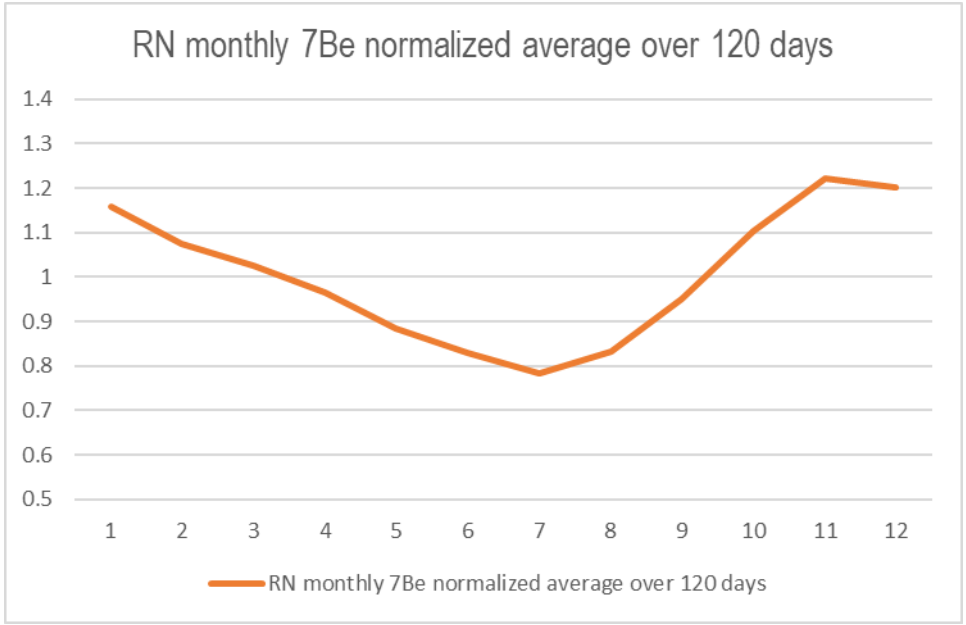
RN50


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

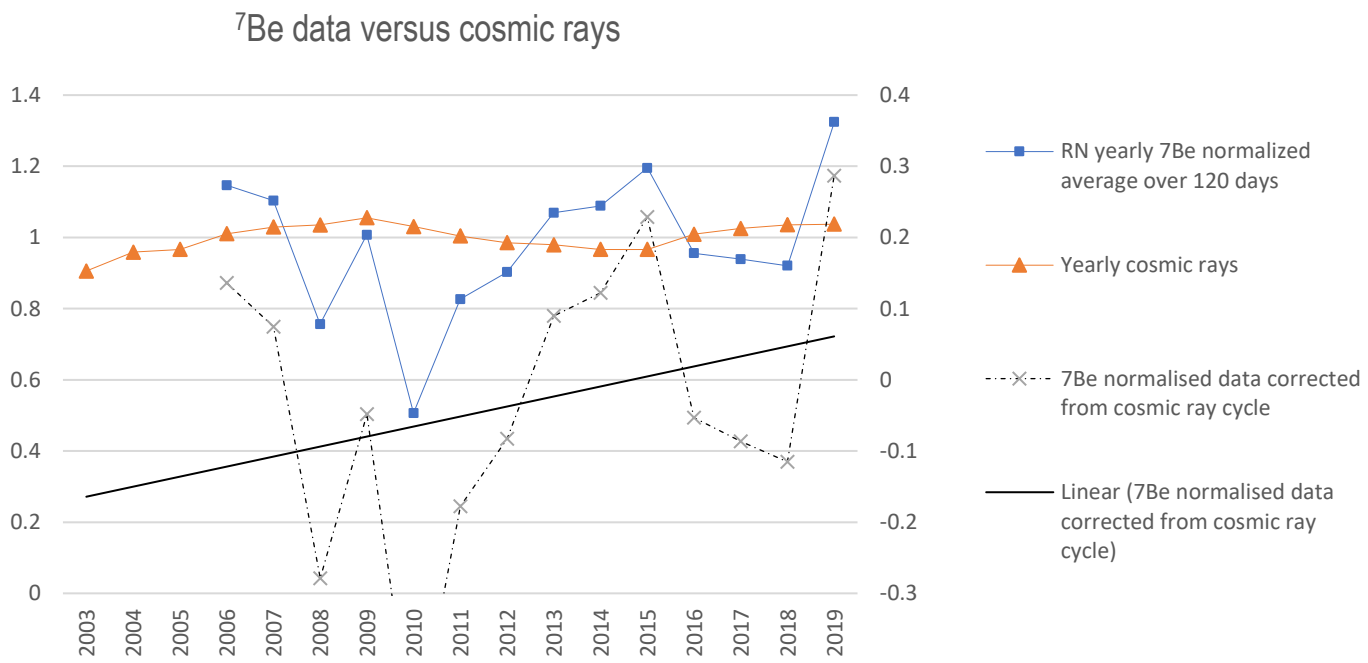

RN monthly 7Be normalized average over 120 days
1.5
1.3
1.1
0.9
0.7
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

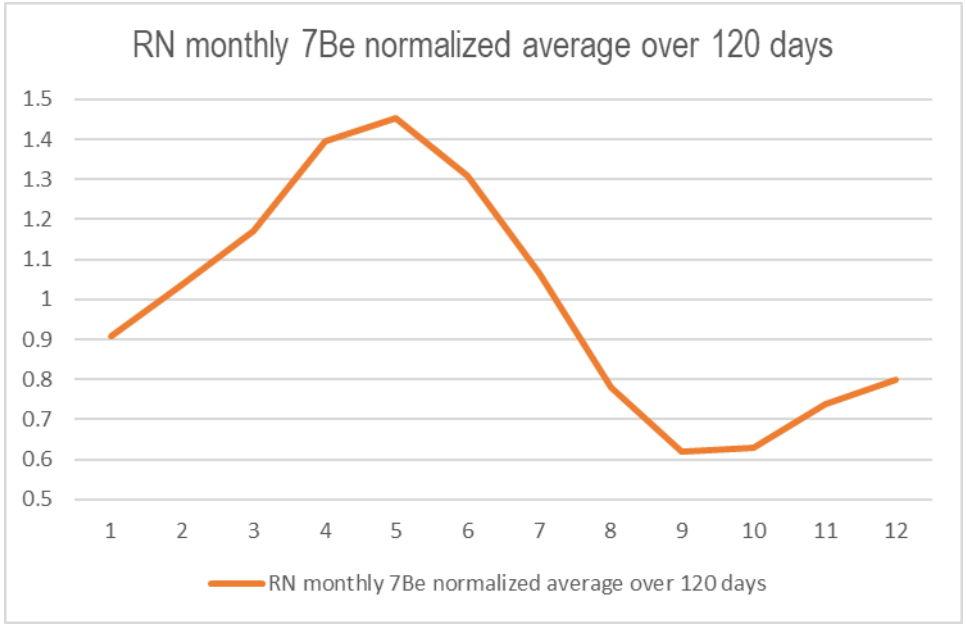
RN51


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

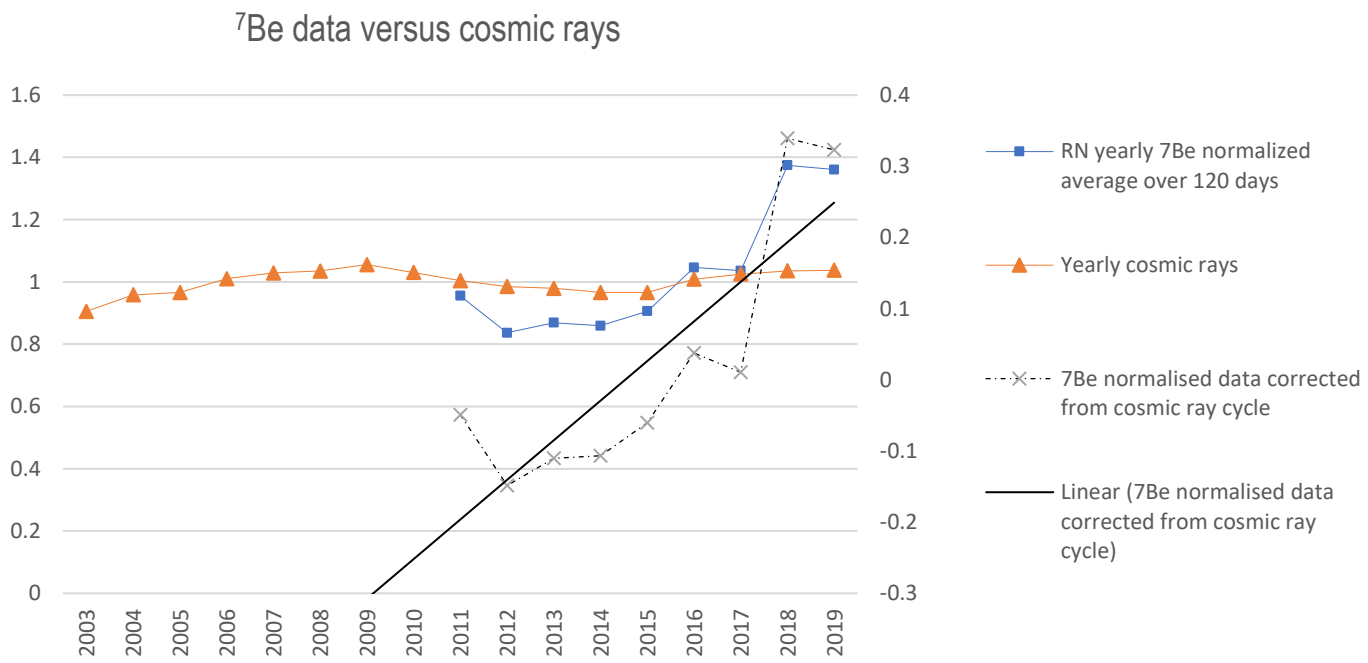

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

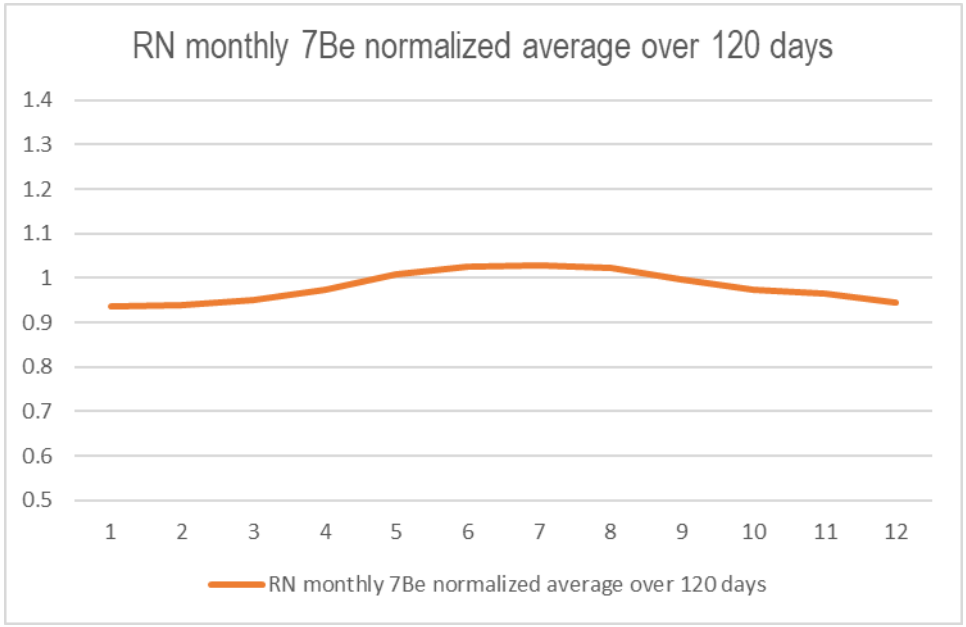
RN52


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

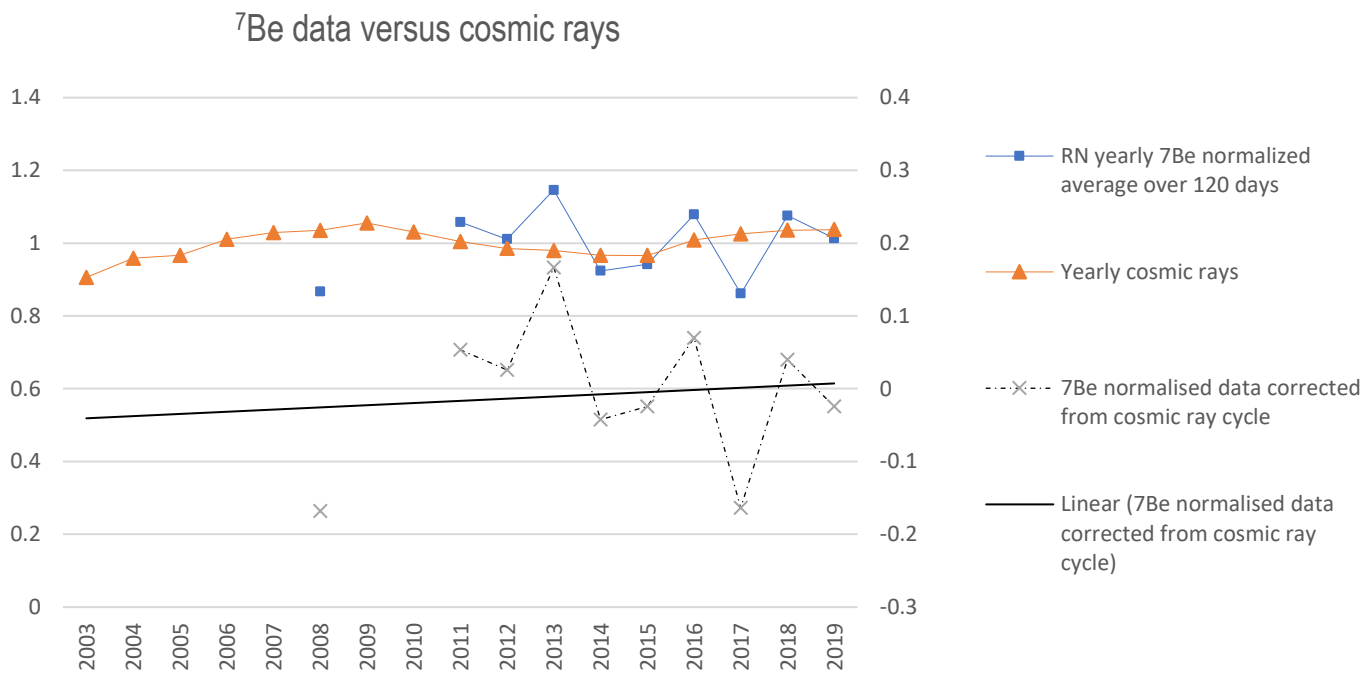

RN monthly 7Be normalized average over 120 days
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

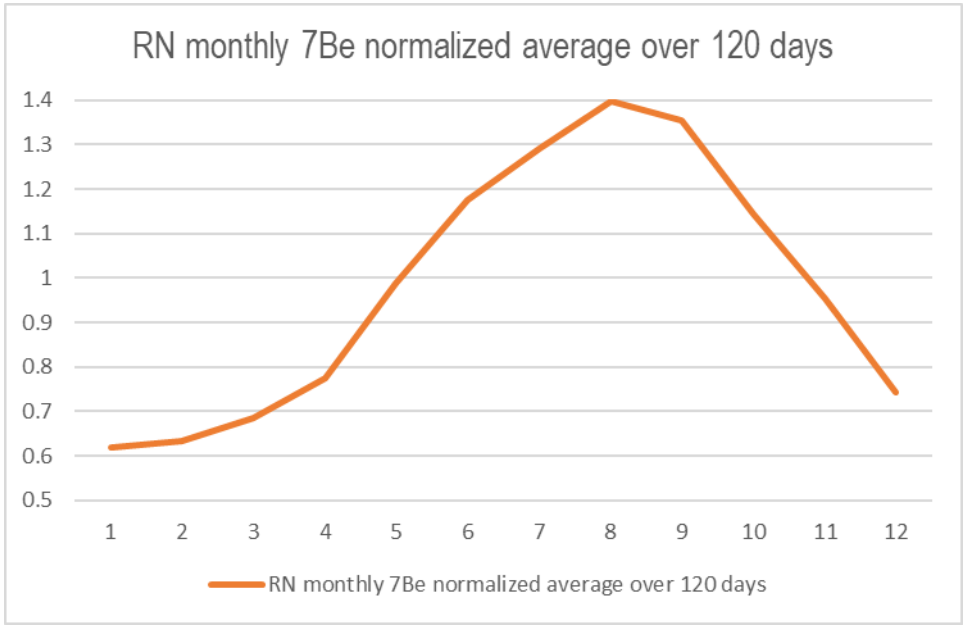
RN53


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

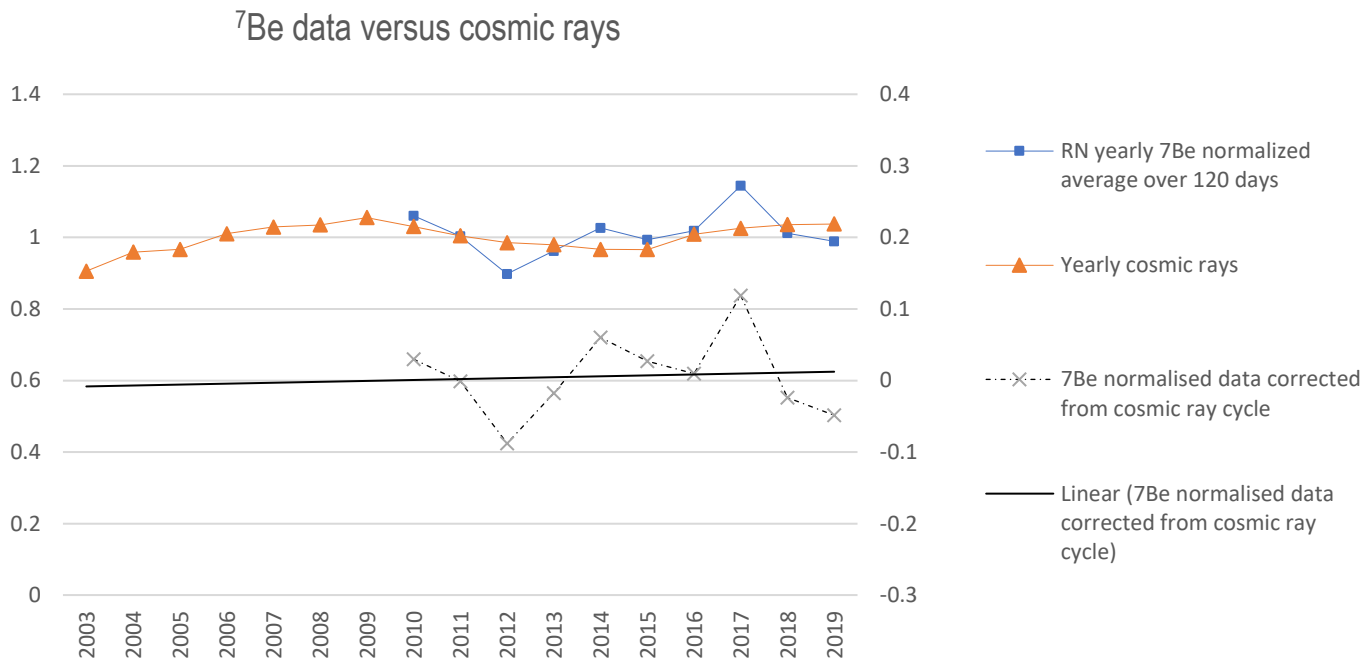

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

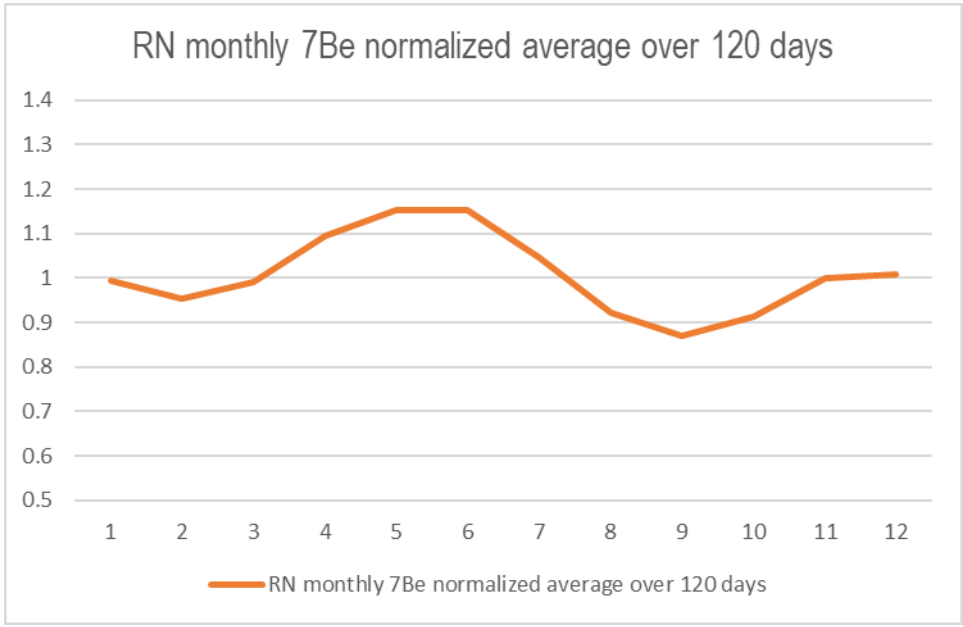
RN54


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

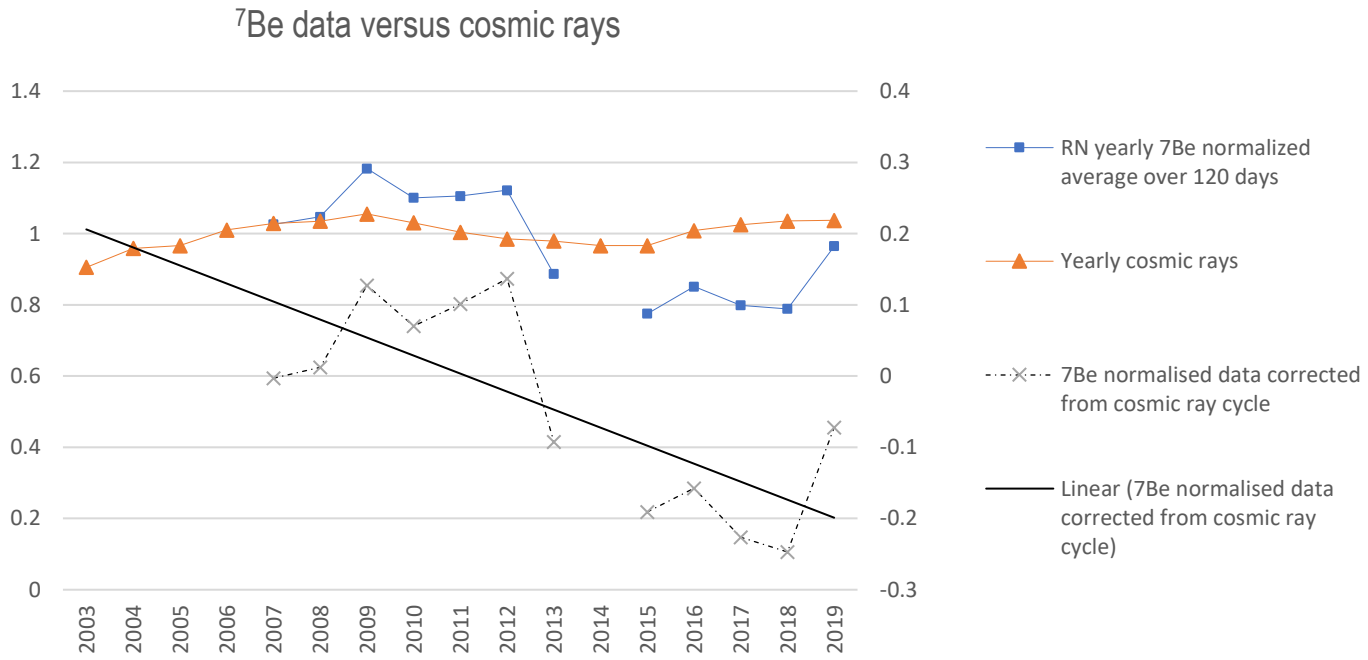

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

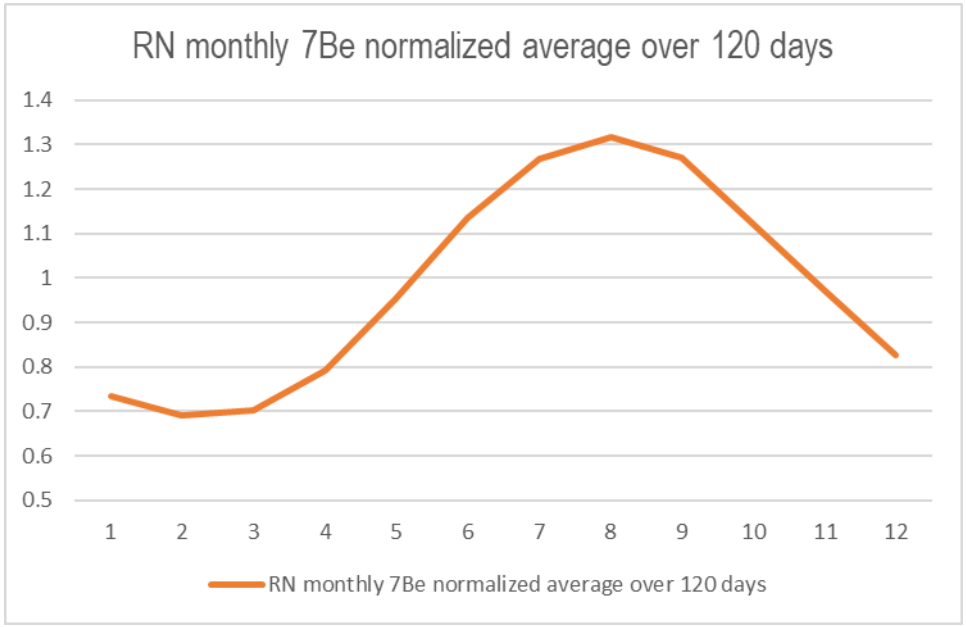
RN58


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

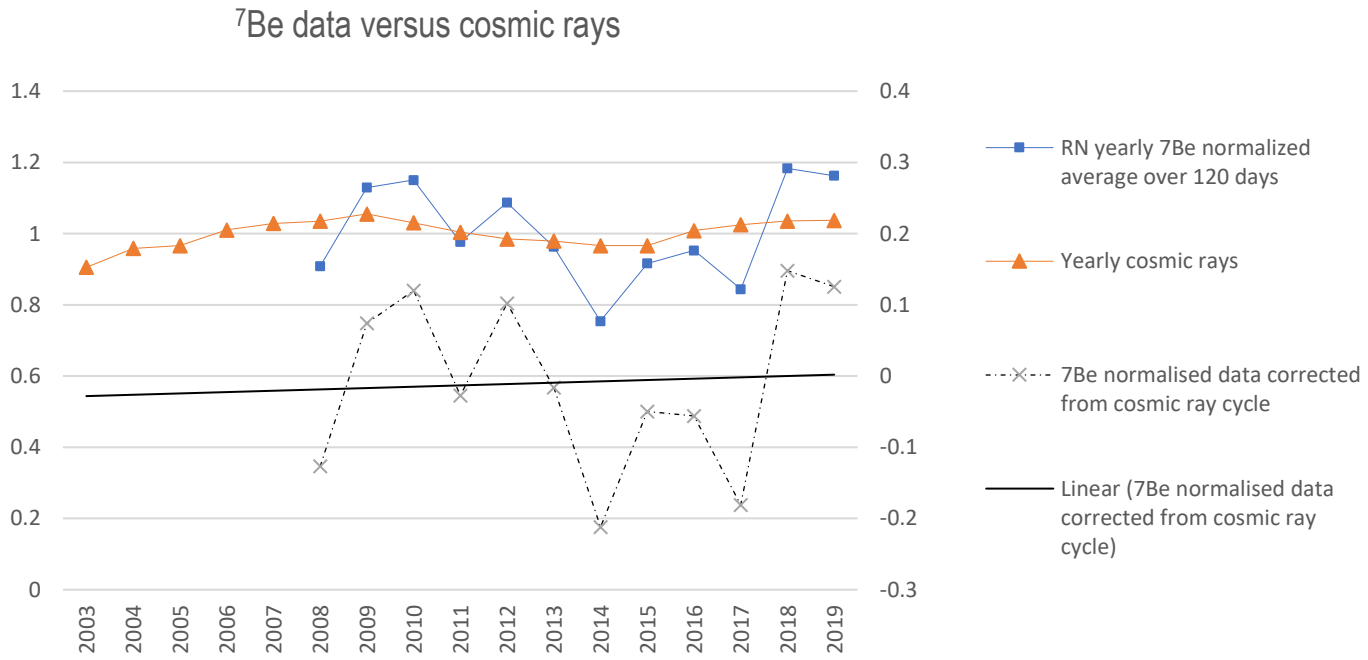

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

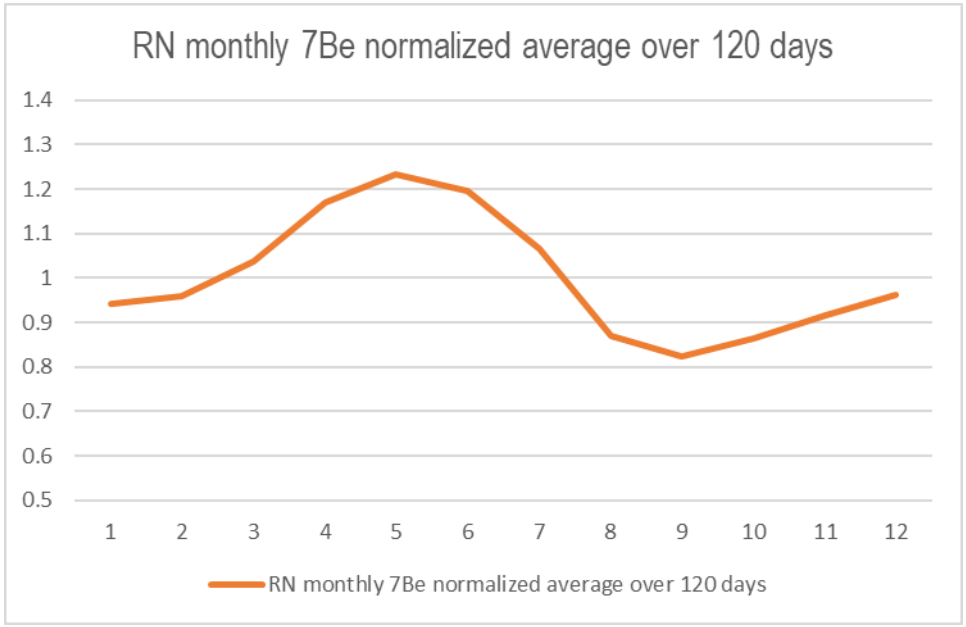
RN59


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

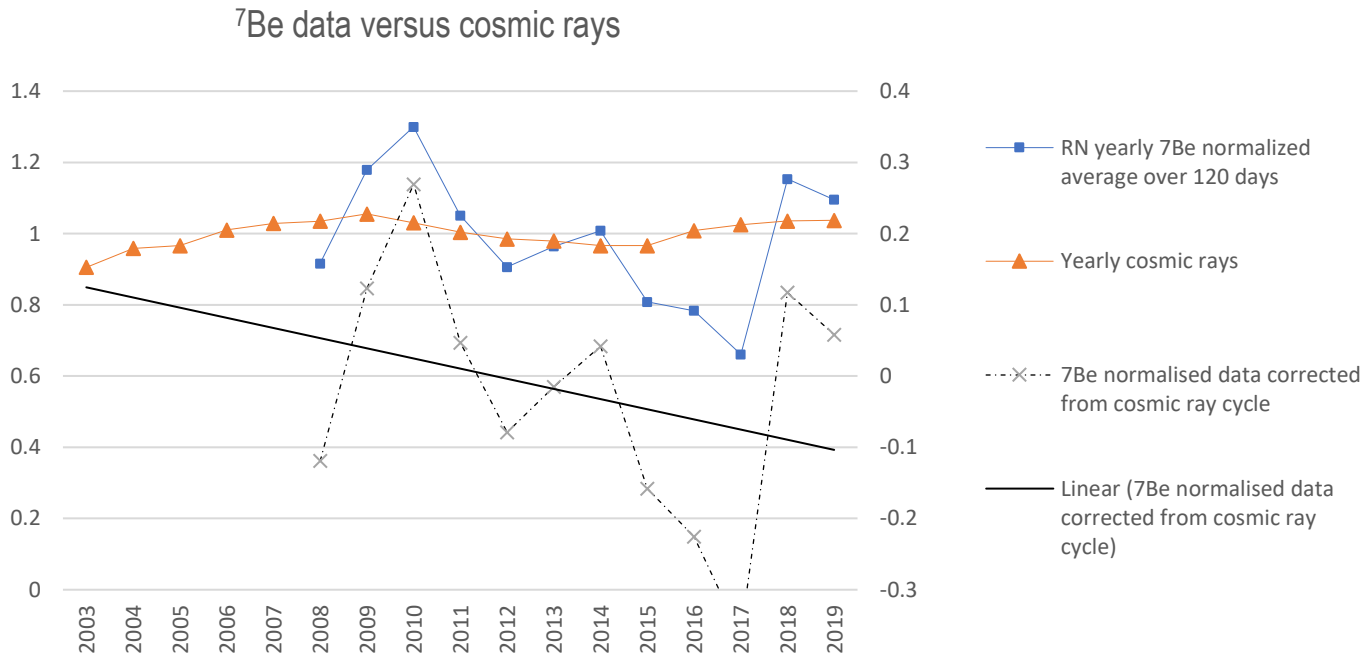

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

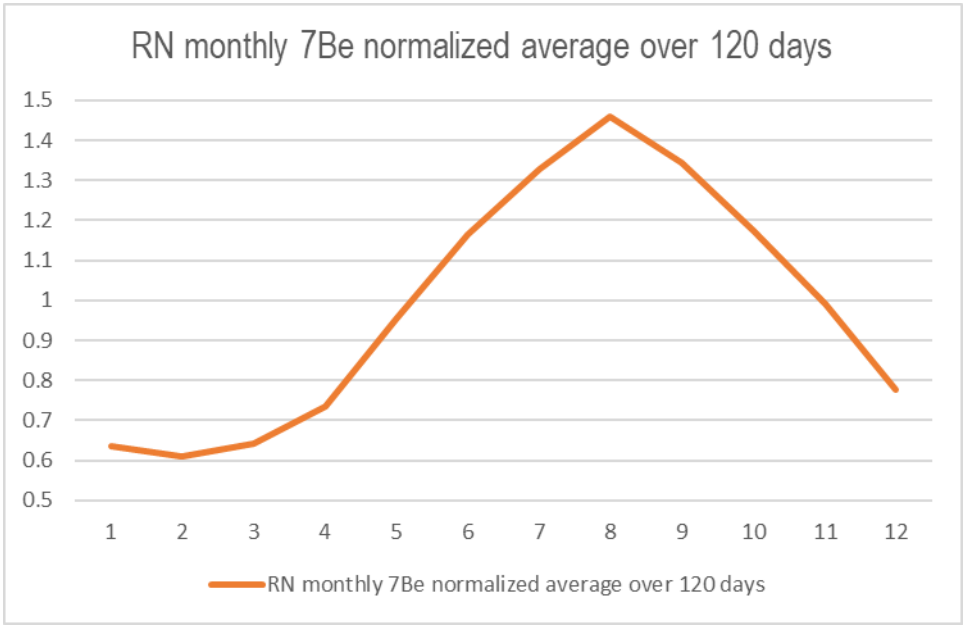
RN60


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

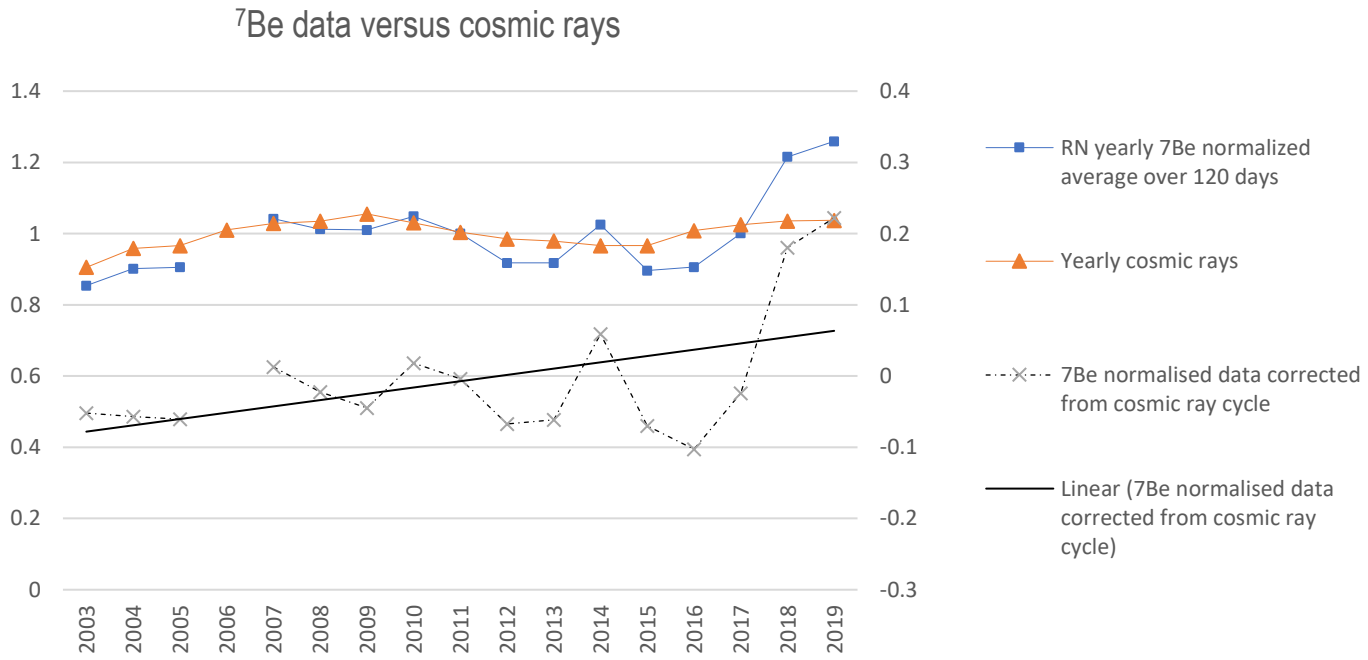

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN61


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN63


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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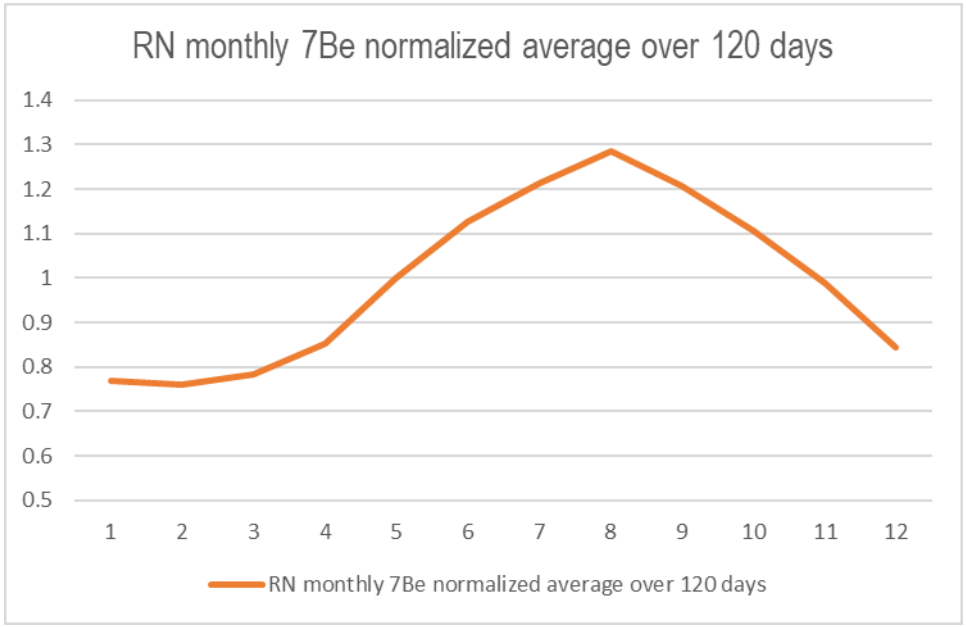
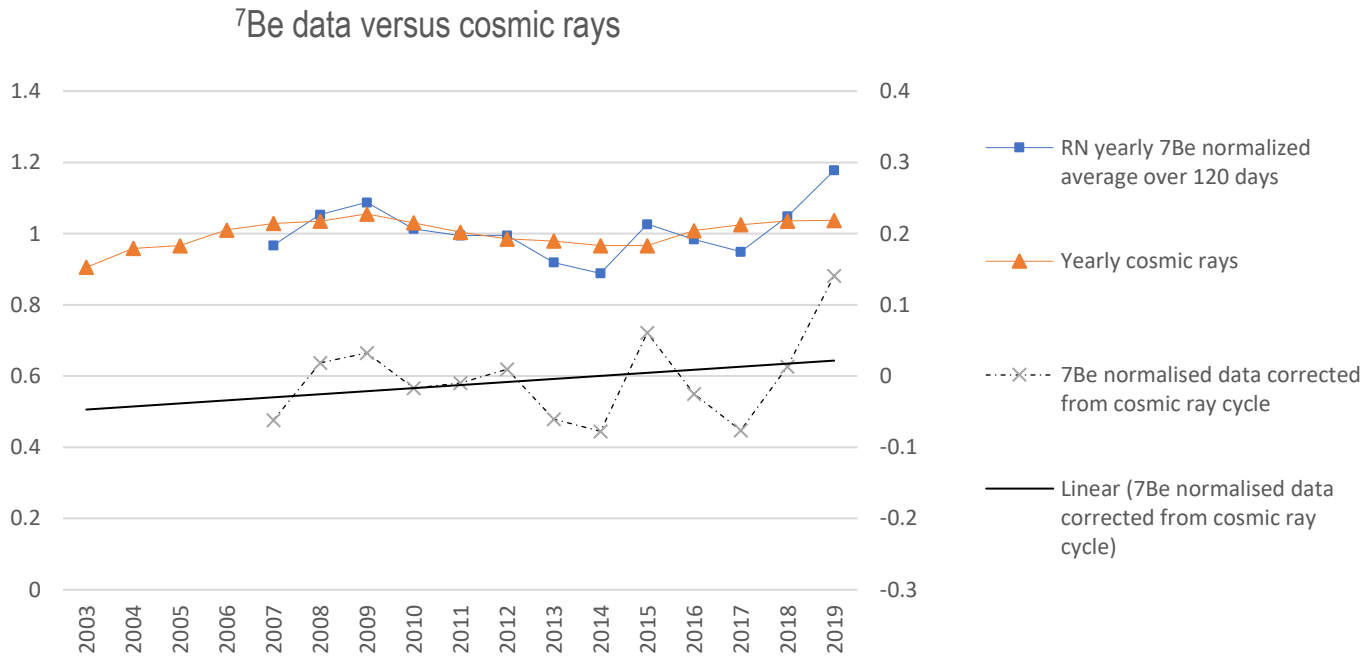
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN64


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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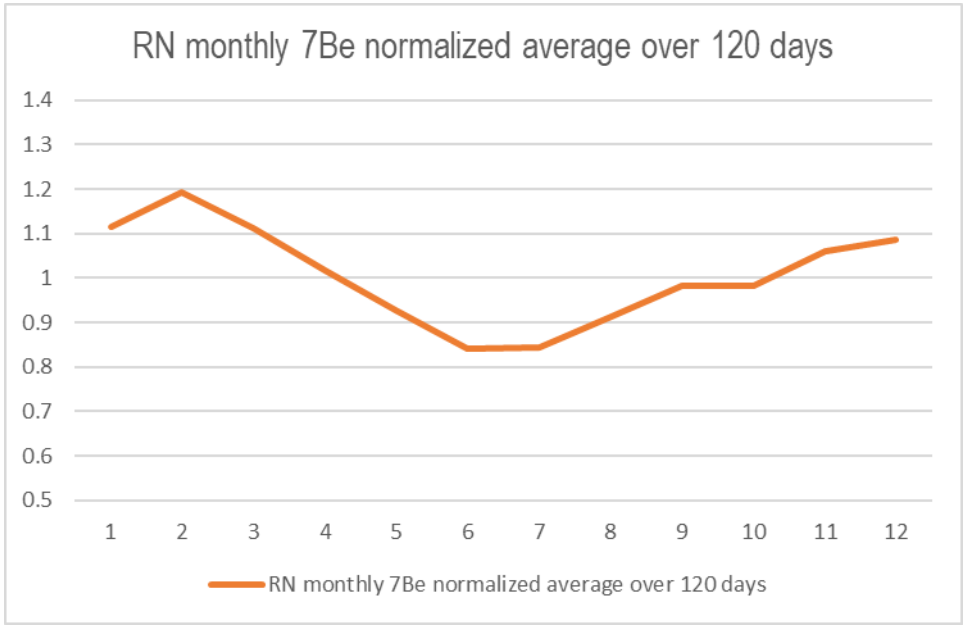
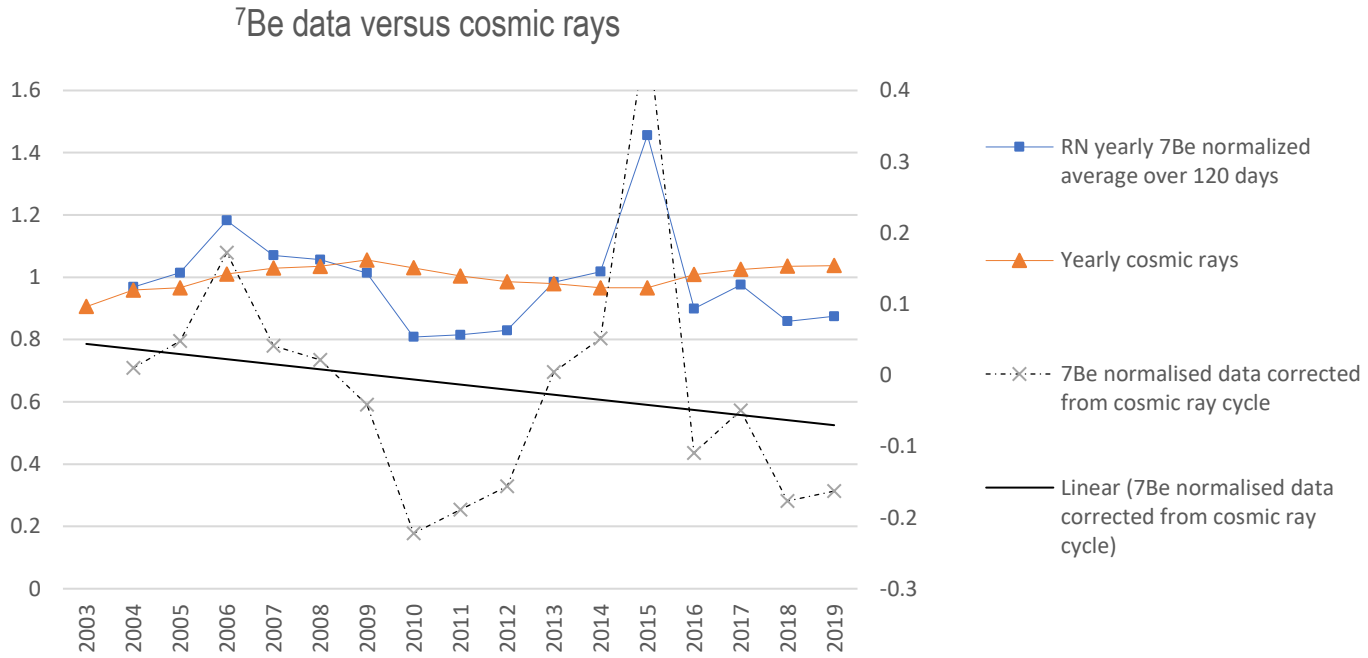
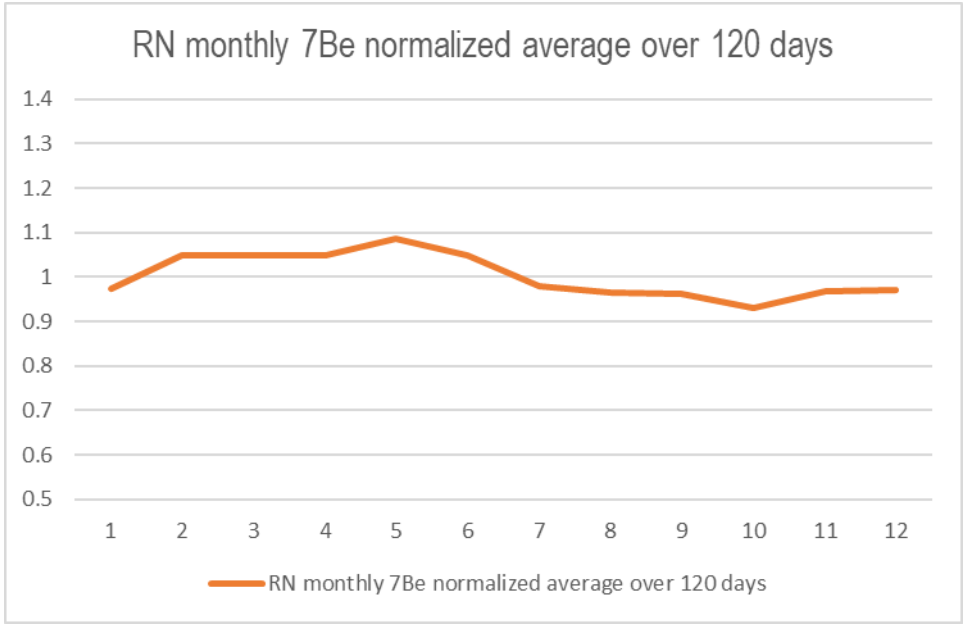
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

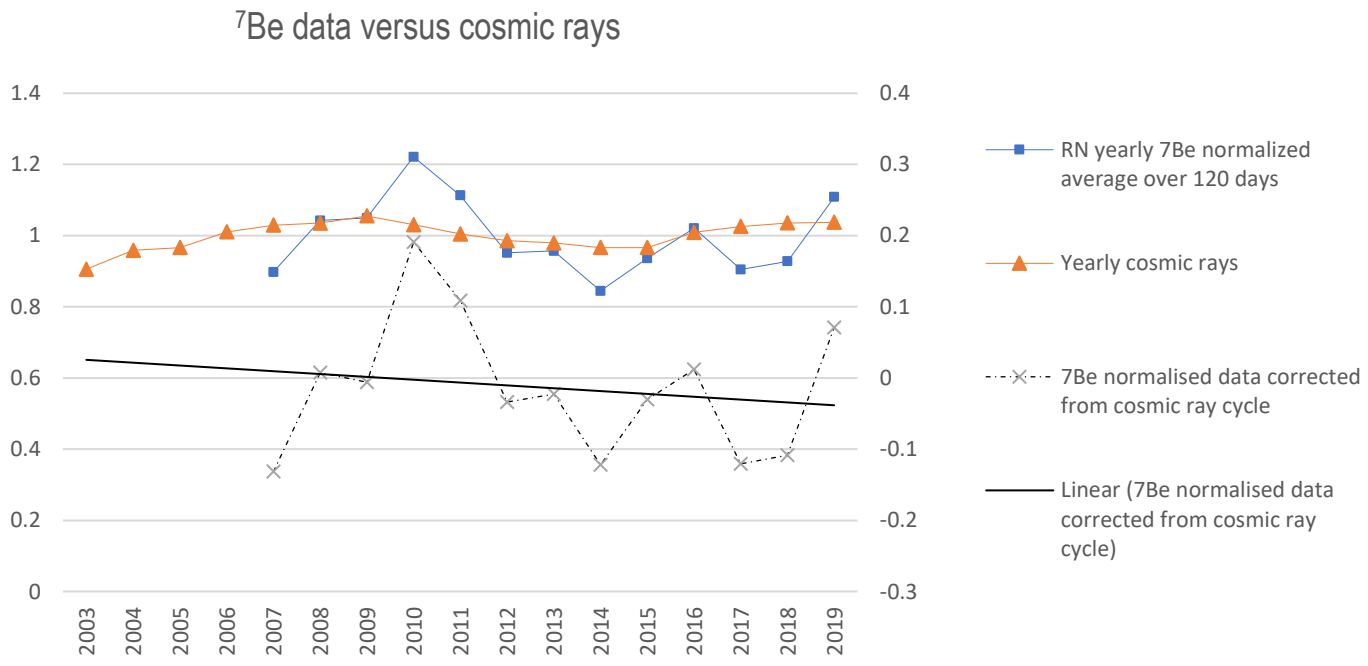

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

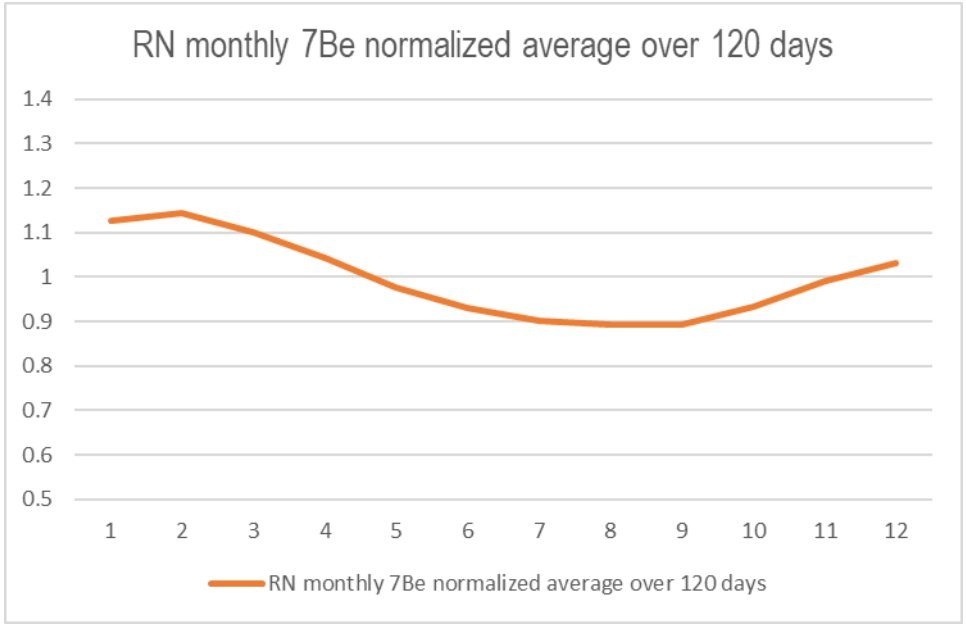
RN66


7Be data versus cosmic rays
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

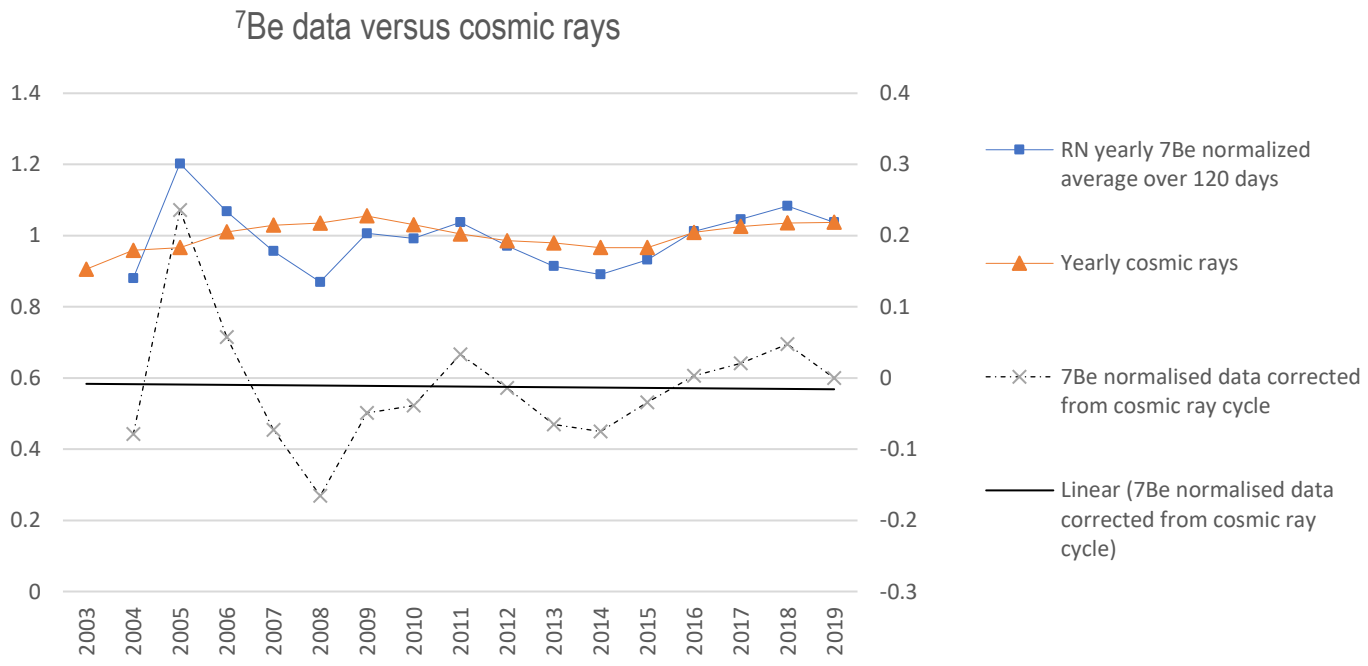

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN67


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN68


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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2009
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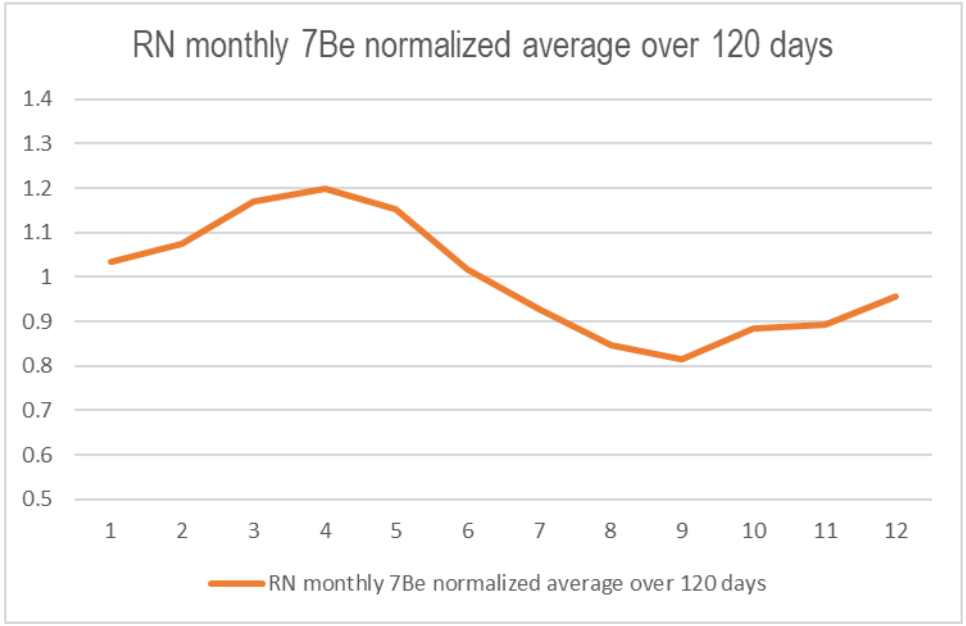
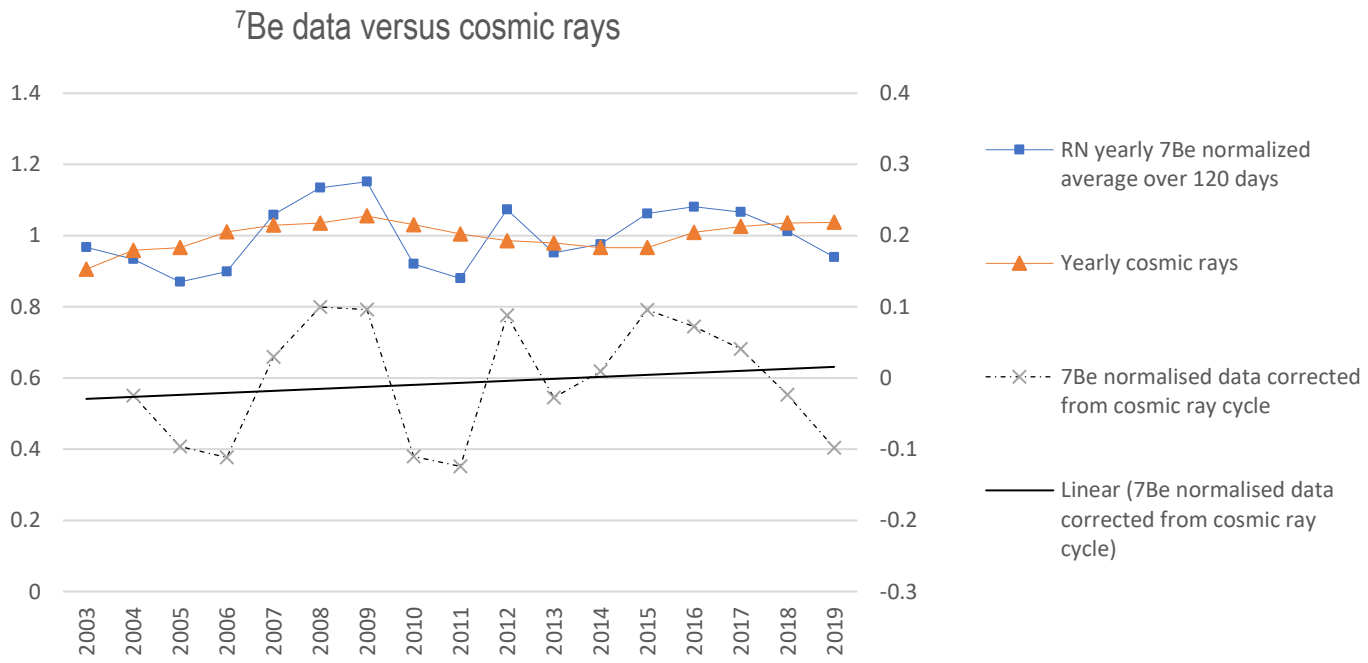
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN70


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
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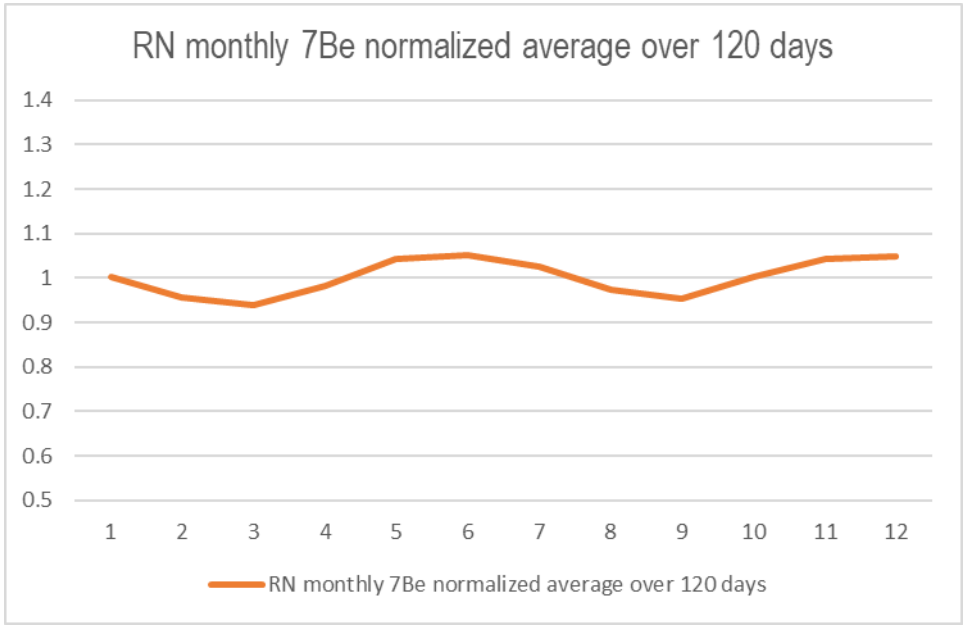
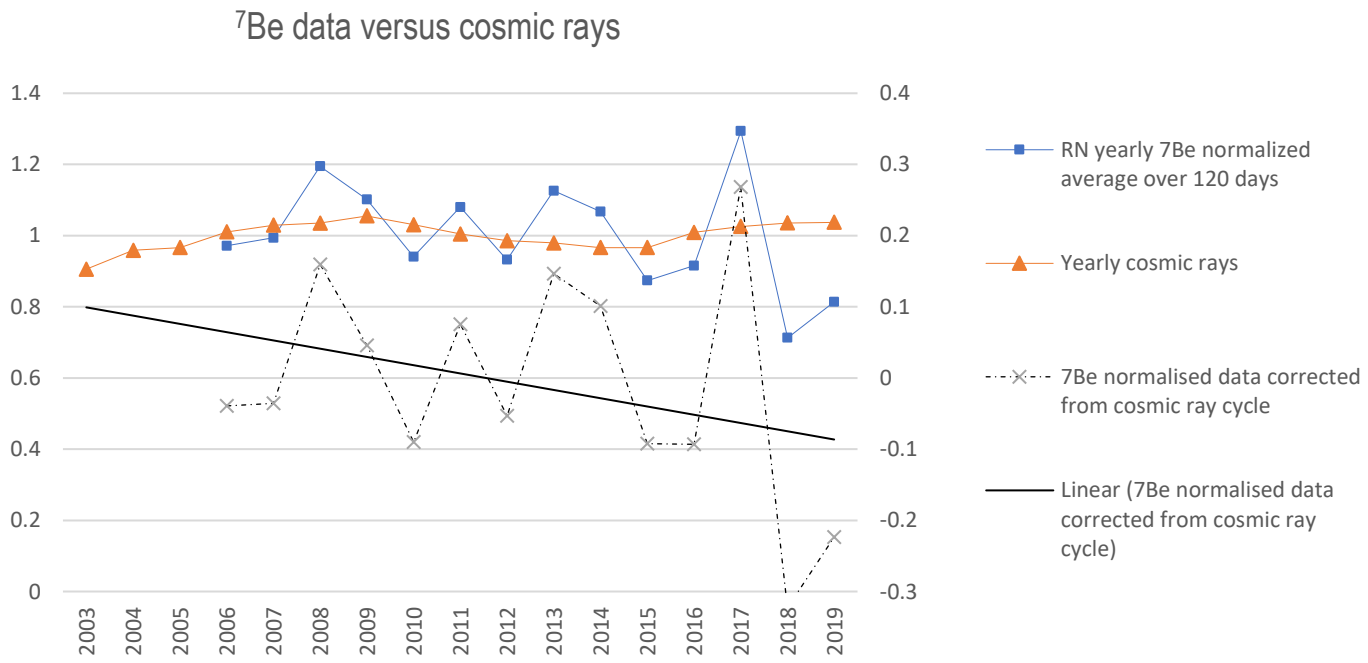
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN71


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
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2010
2011
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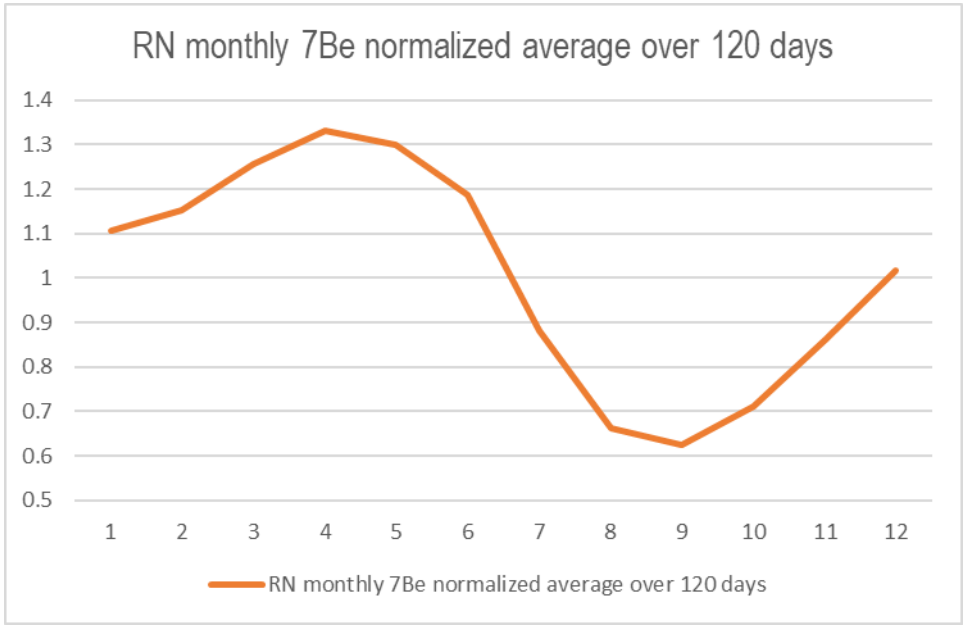
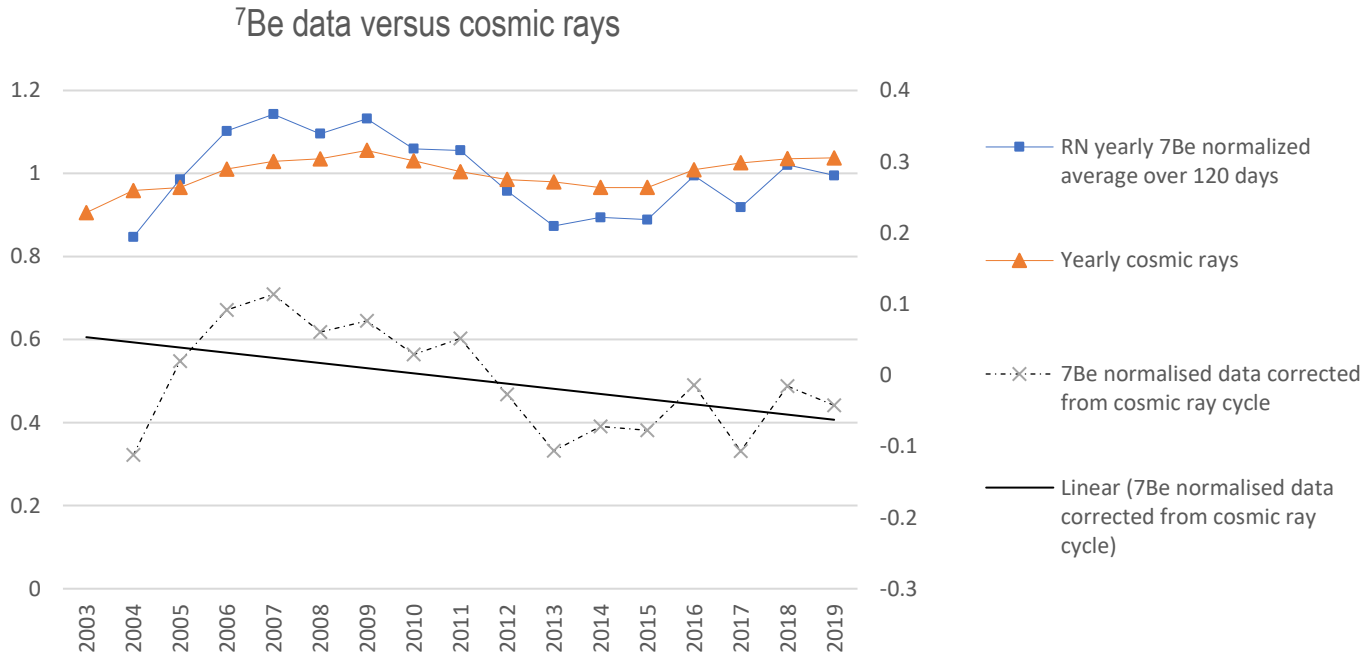
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN72


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
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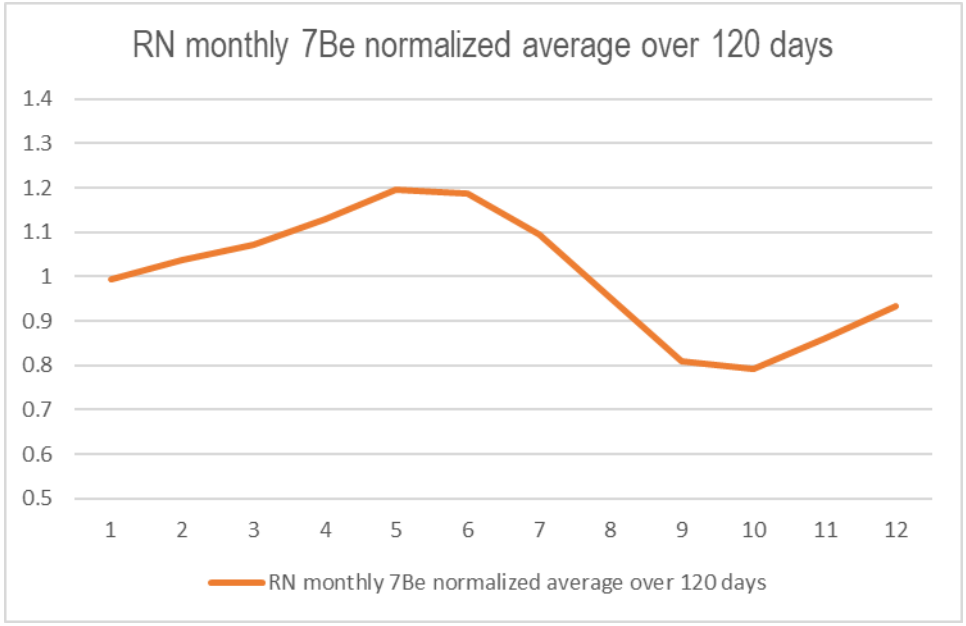
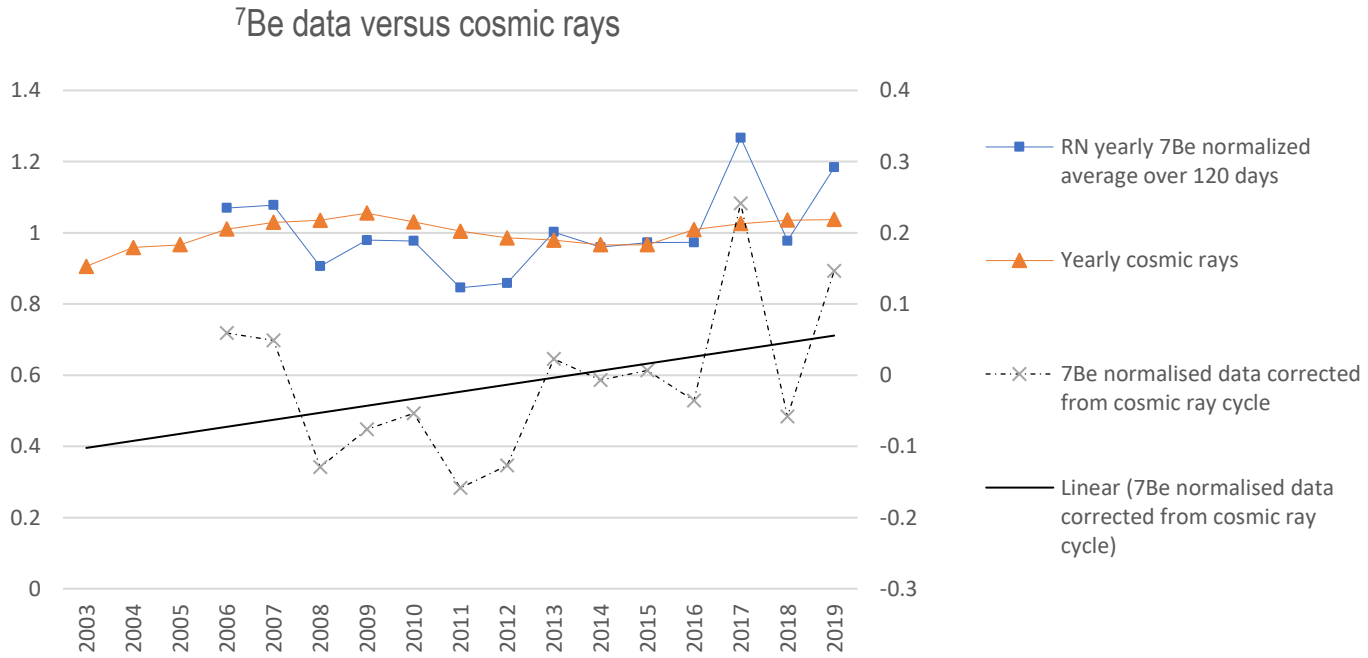
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN73


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
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2010
2011
2012
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2014
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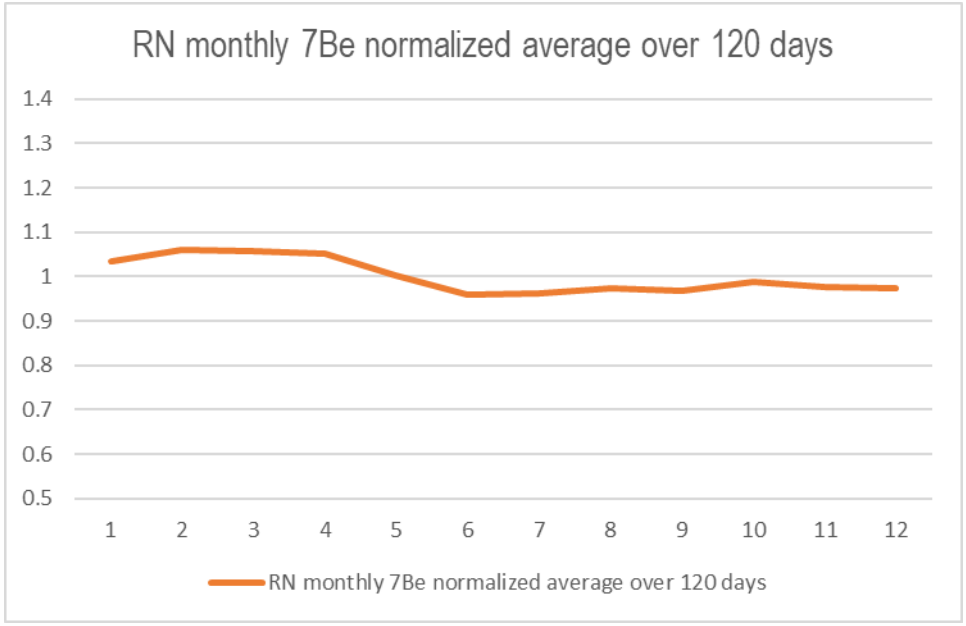
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
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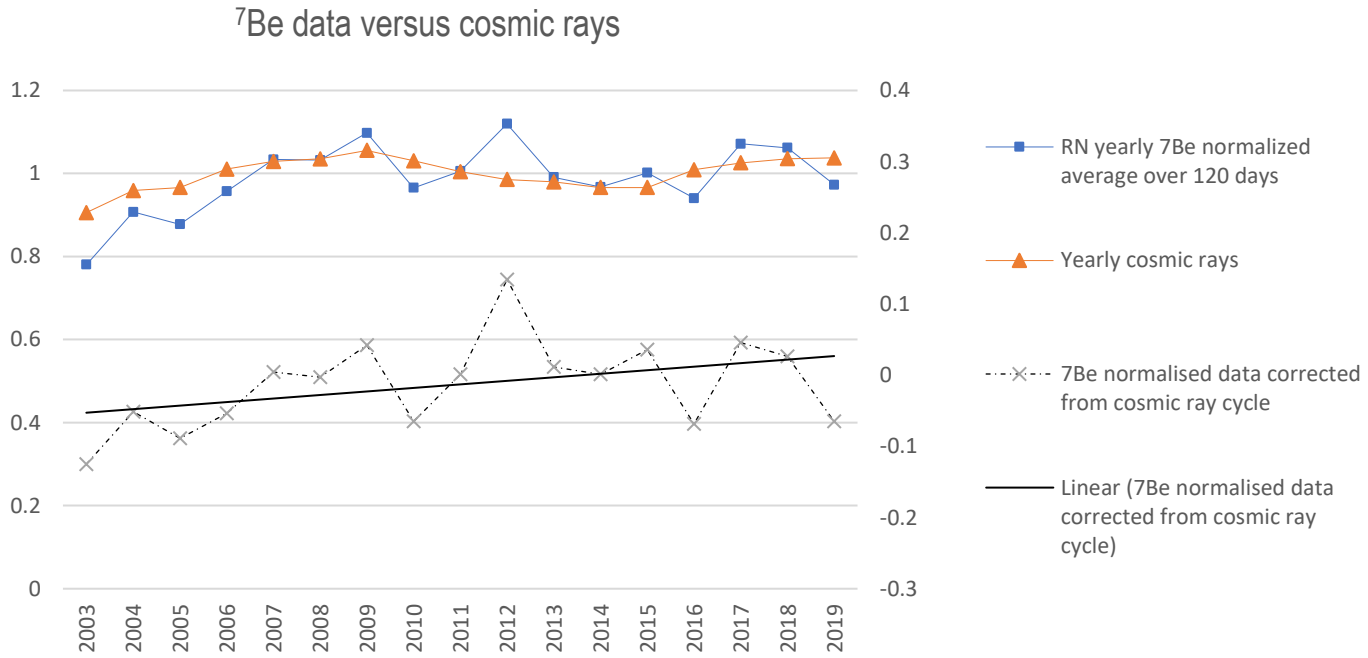
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN74


7Be data versus cosmic rays
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
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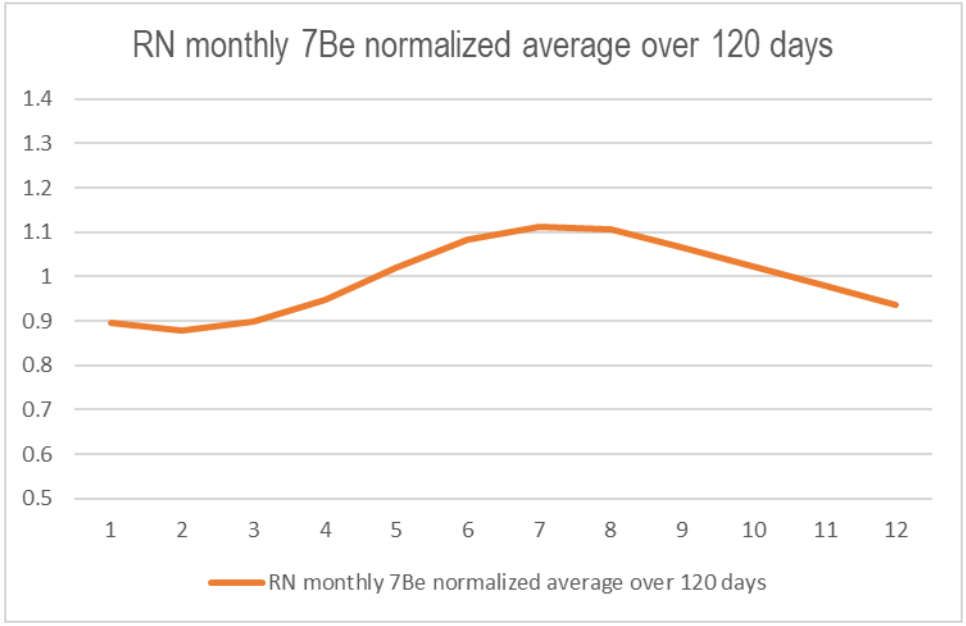
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
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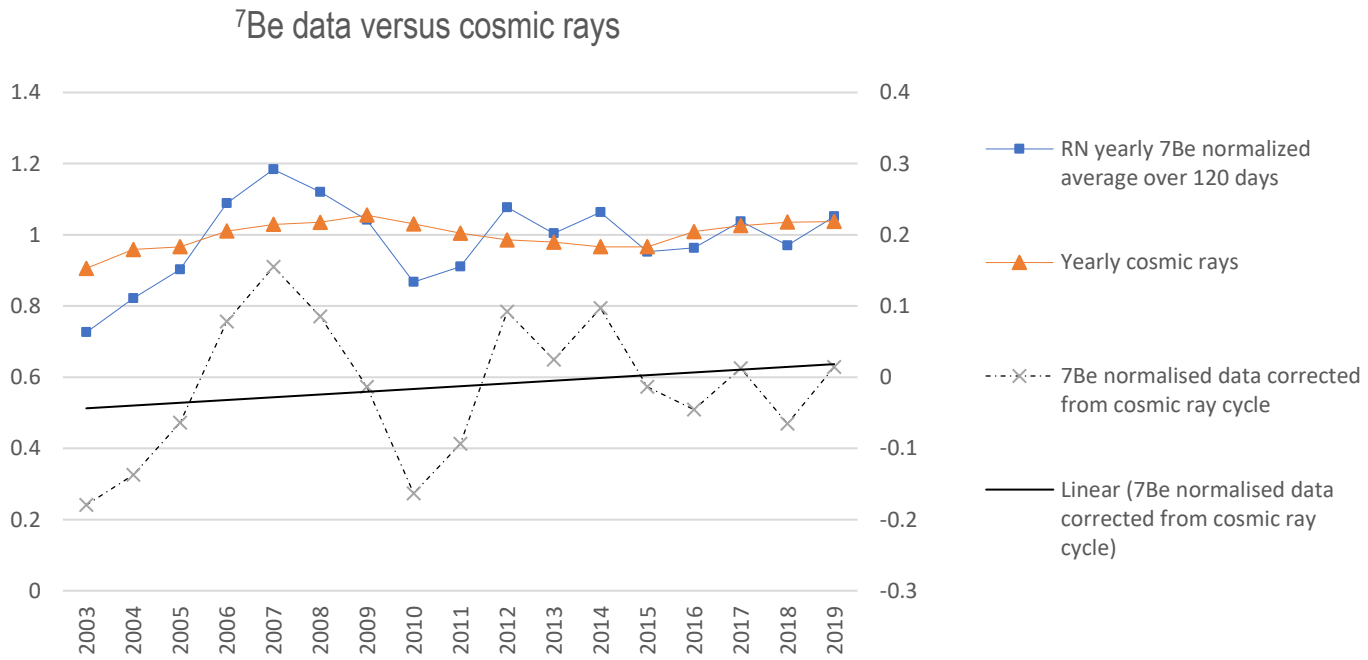
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN75


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
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2016
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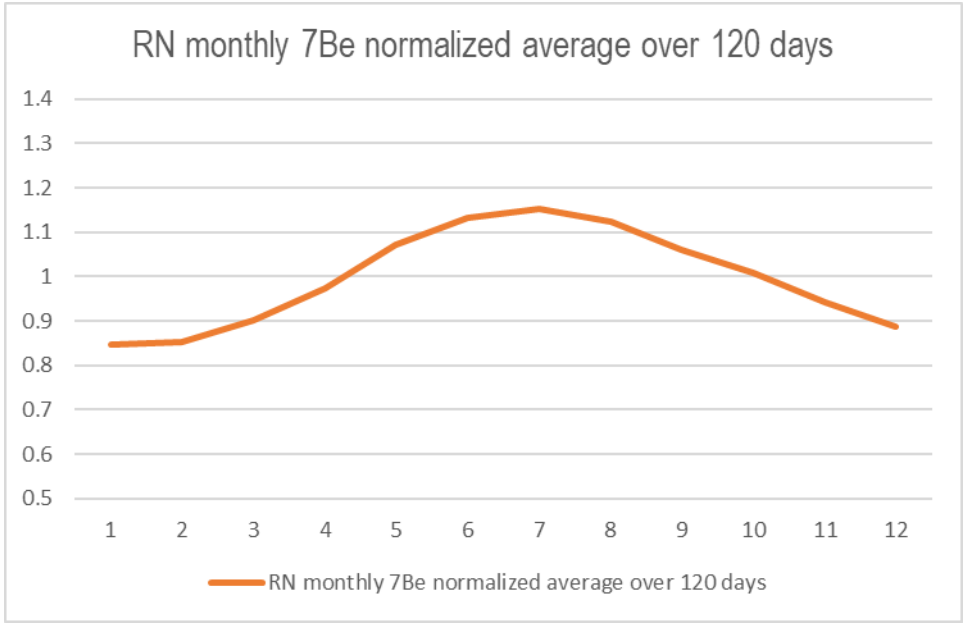
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
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6
7
8
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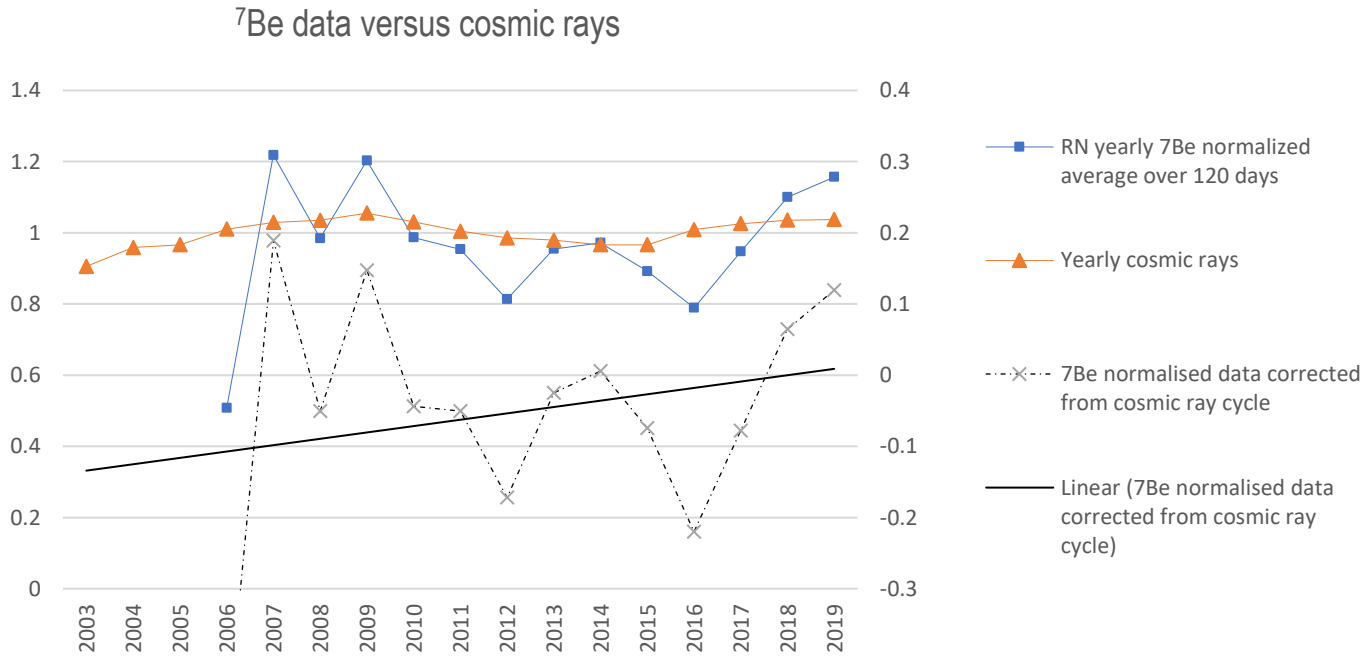
10
11
12
RN monthly 7Be normalized average over 120 days

RN76


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
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2016
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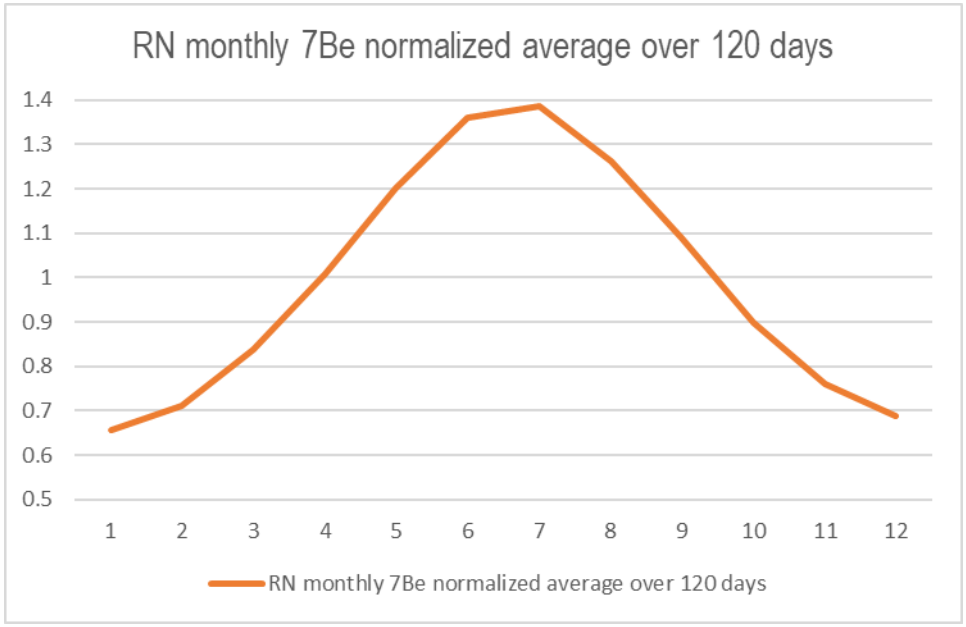
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
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6
7
8
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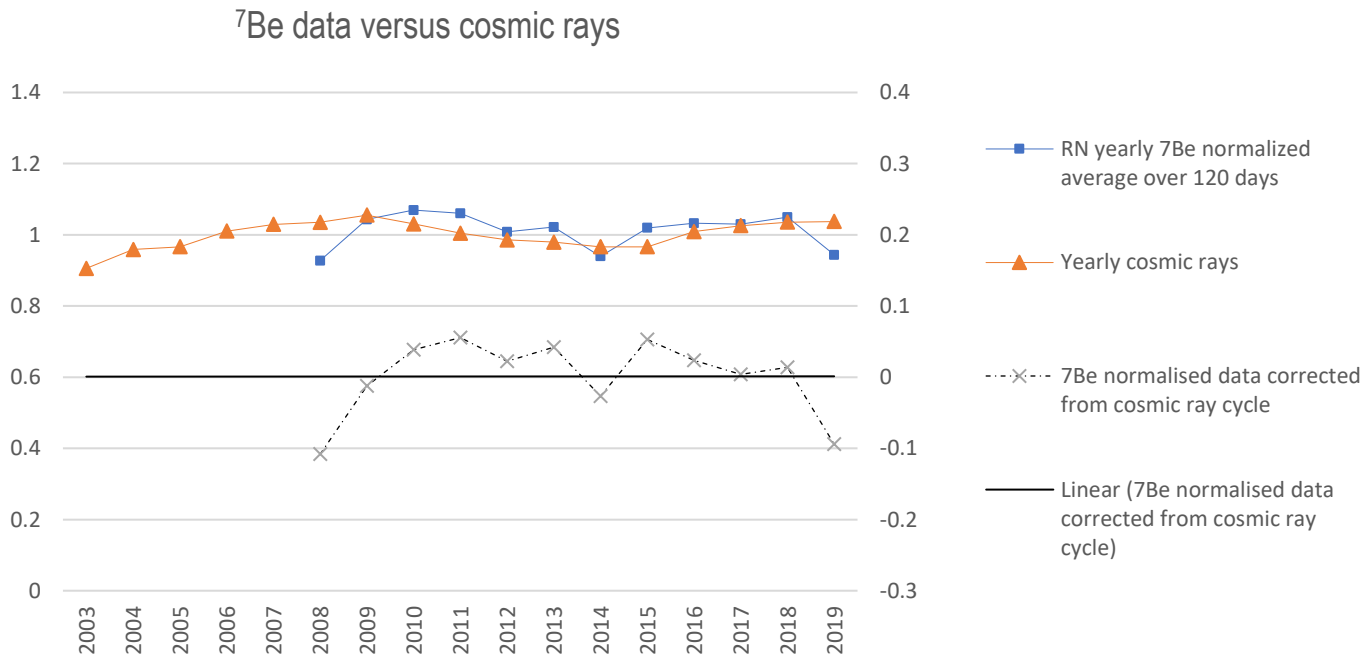
10
11
12
RN monthly 7Be normalized average over 120 days

RN77


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
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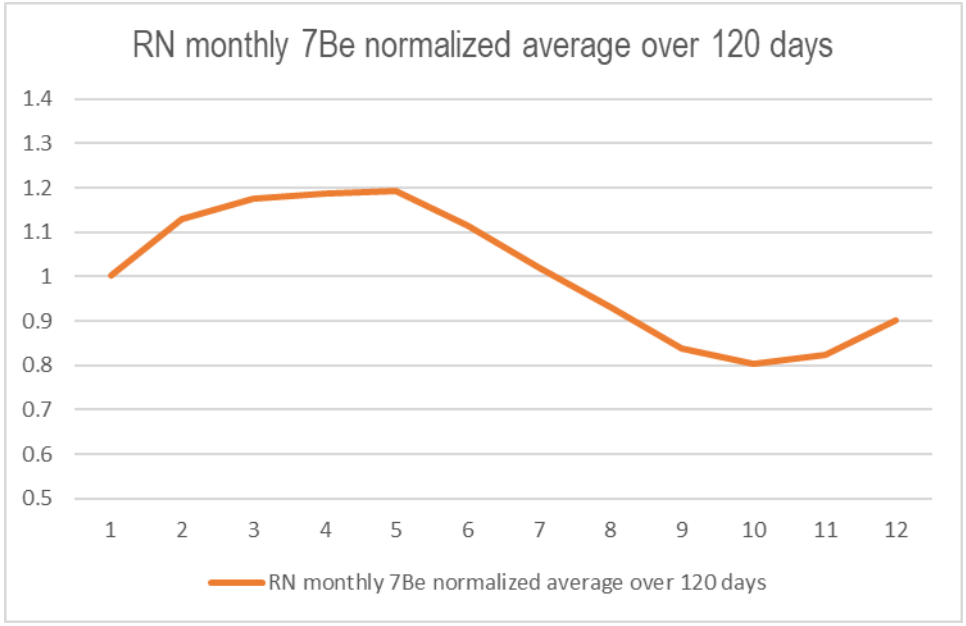
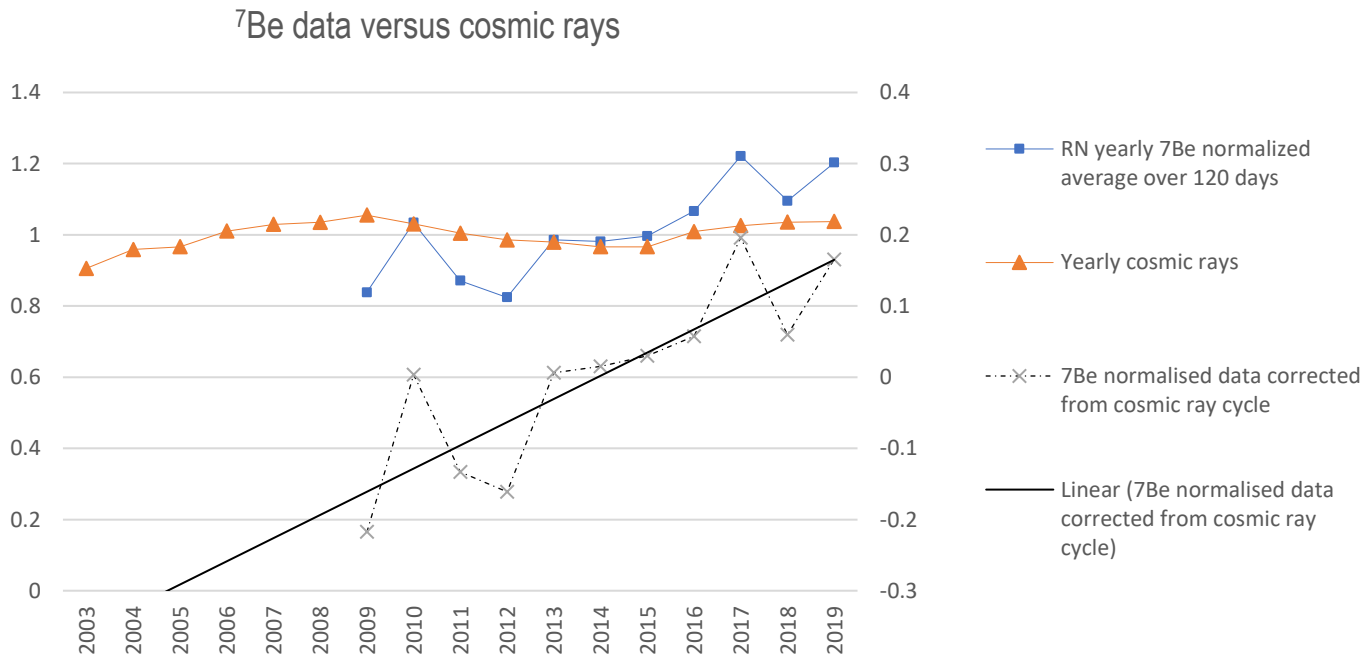
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN78


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
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2011
2012
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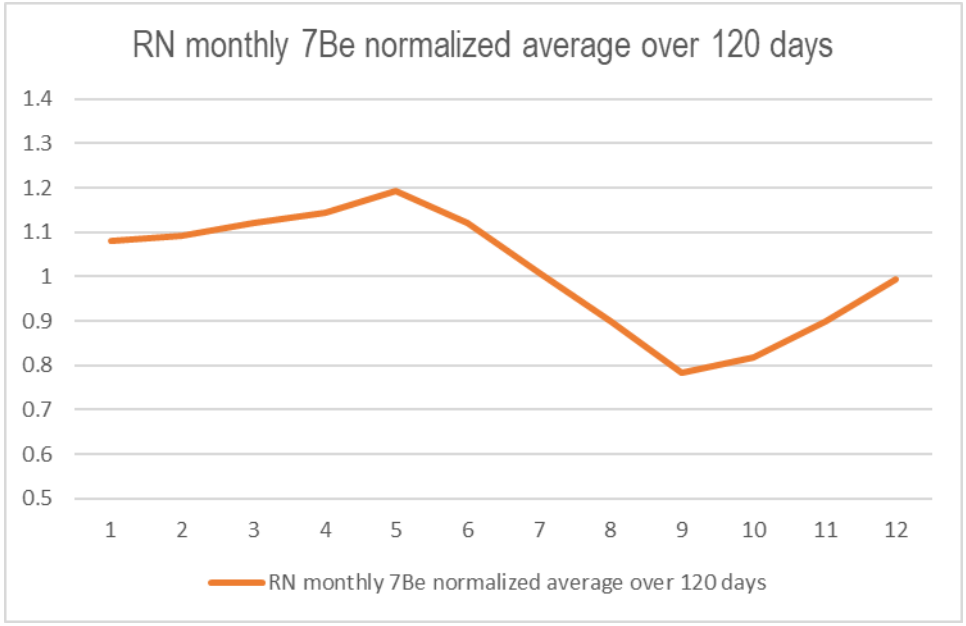
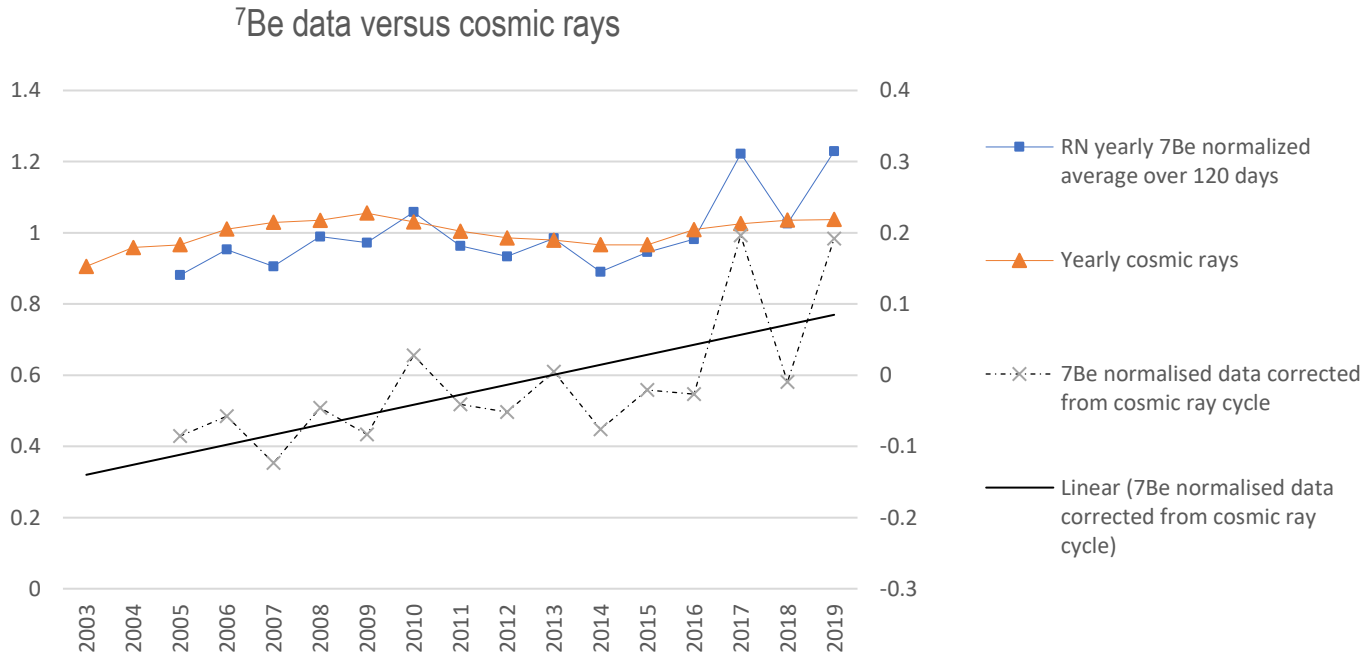
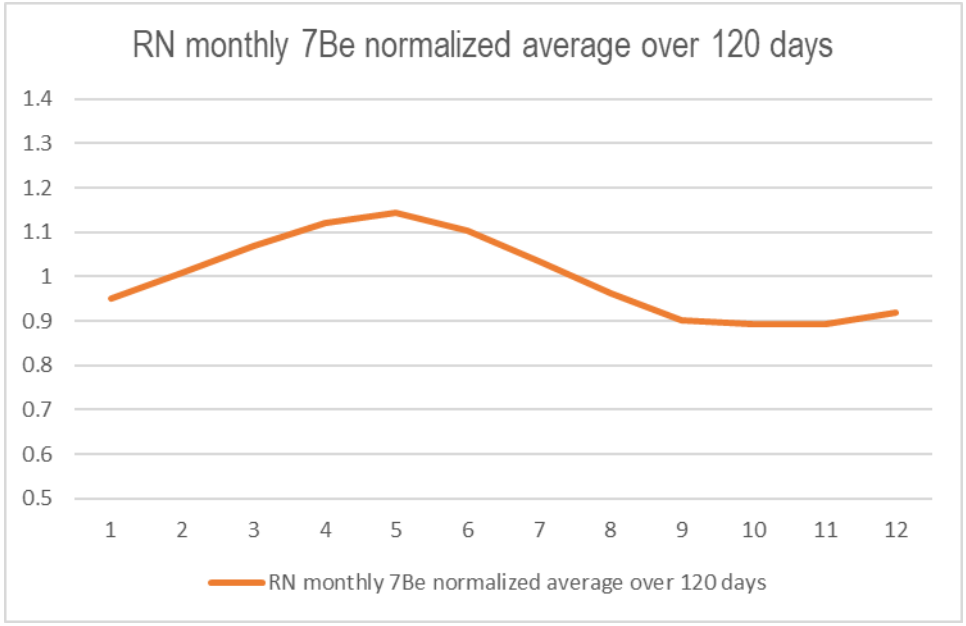
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)

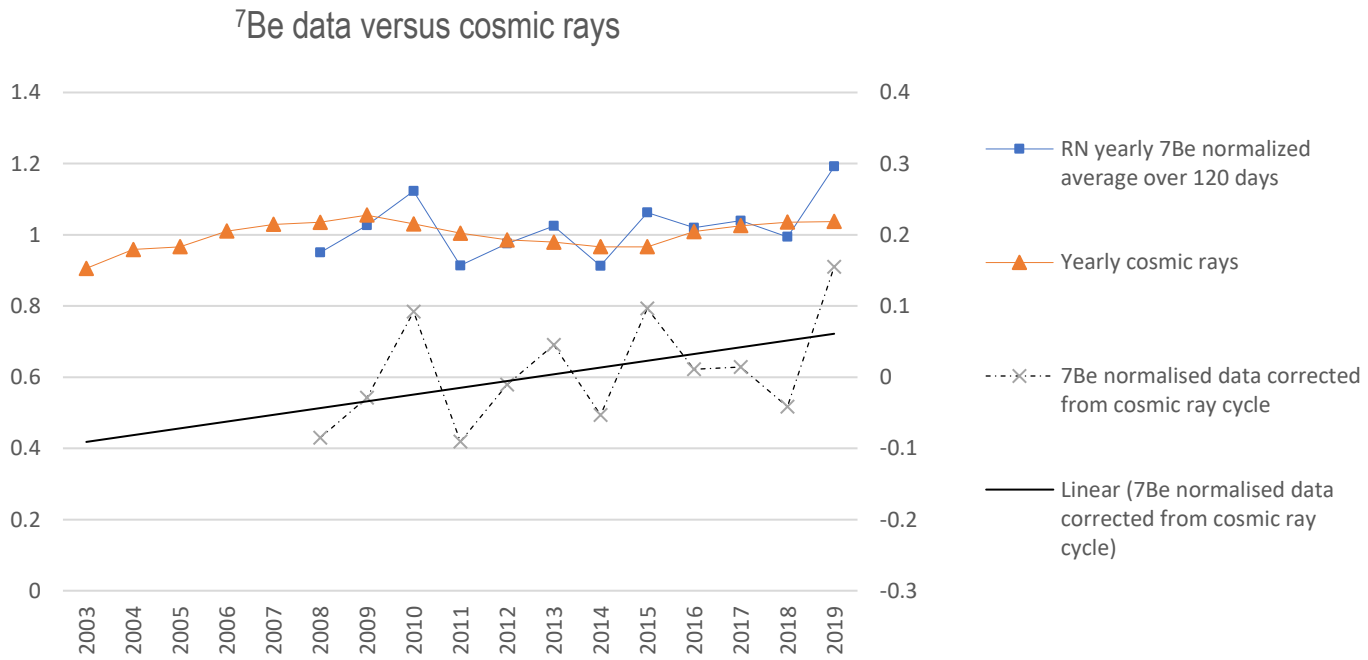

RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

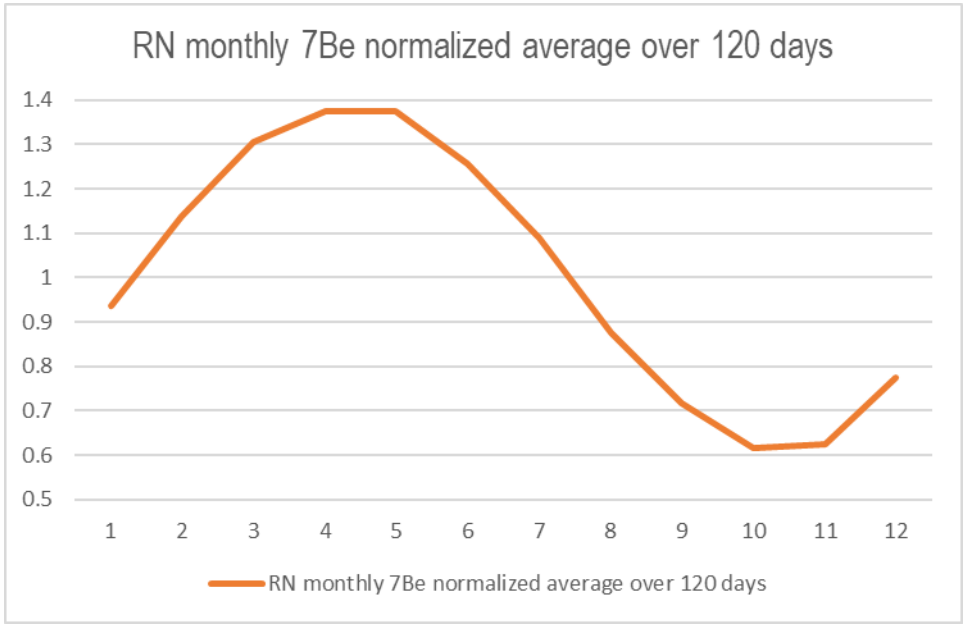
RN79


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days

RN80


7Be data versus cosmic rays
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
RN yearly 7Be normalized average over 120 days
Yearly cosmic rays
7Be normalised data corrected from cosmic ray cycle
Linear (7Be normalised data corrected from cosmic ray cycle)


RN monthly 7Be normalized average over 120 days
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
1
2
3
4
5
6
7
8
9
10
11
12
RN monthly 7Be normalized average over 120 days