Data Descriptor: **Climate Stability Index maps, a global high resolution cartography of climate stability from Pliocene to 2100**
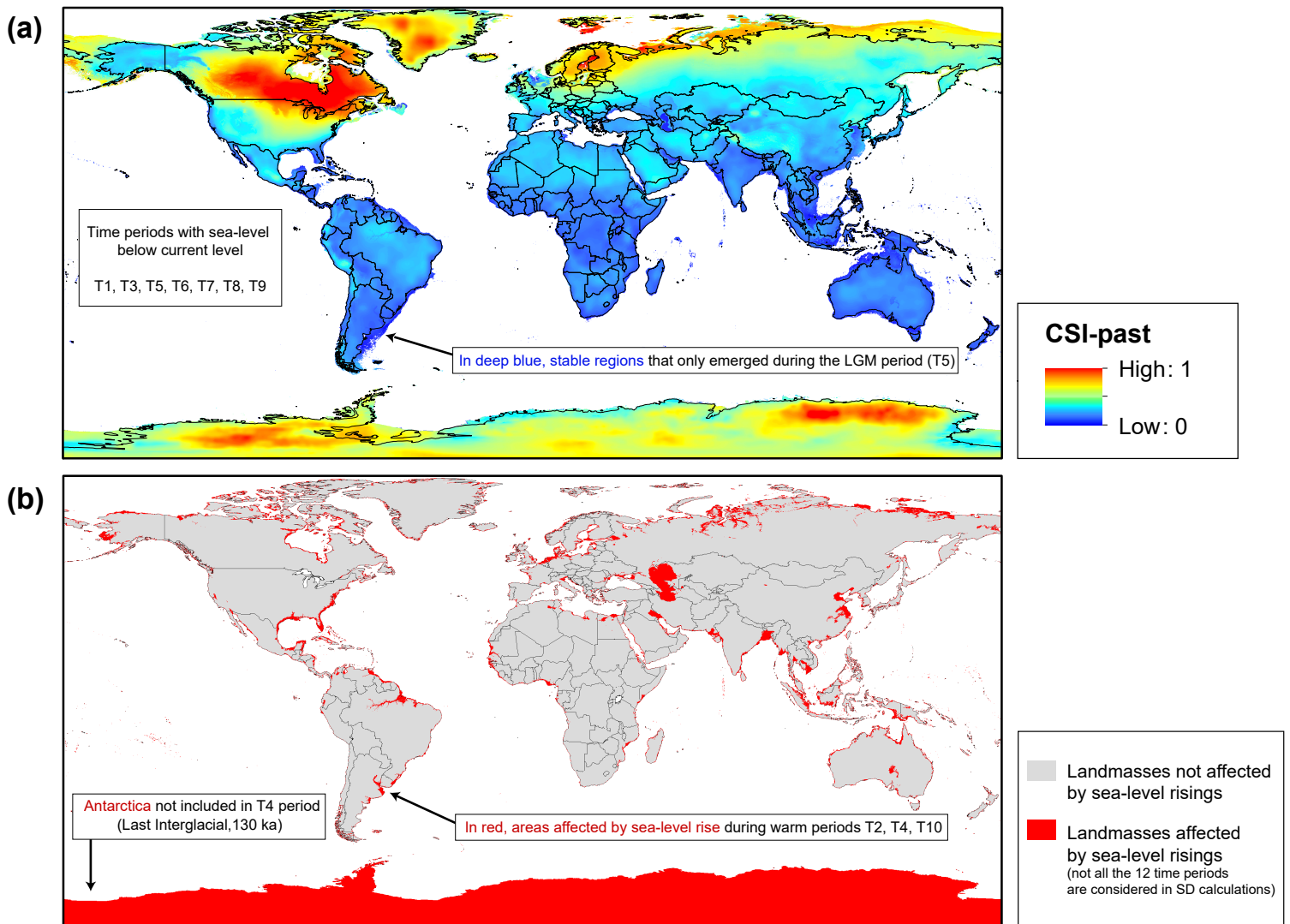
Sonia Herrando-Moraira, Neus Nualart, Mercè Galbany-Casals, Núria Garcia-Jacas, Haruka Ohashi, Tetsuya Matsui, Alfonso Susanna, Cindy Q. Tang & Jordi López-Pujol

Table of contents

Supplementary Fig. 1 (**a**) Map of Climate Stability Index (CSI) values for the past map set [Pliocene (3.3 Ma) to present (1979–2013)], at 2.5 arc-min grid resolution. All pixels have been considered in calculations, despite the fact that in some regions where sea-level dropped during cold periods (T1, T3, T5, T6, T7, T8, T9, see Fig. 1 for time period names) there are values for only one or few time periods, while the remaining time periods have NoData codes. (**b**) Map showing the areas (in red) affected by some sea-level rising periods (T2, T4, T10, see Fig. 1 for time period names). A raster layer with the affected areas is available at Figshare[1].
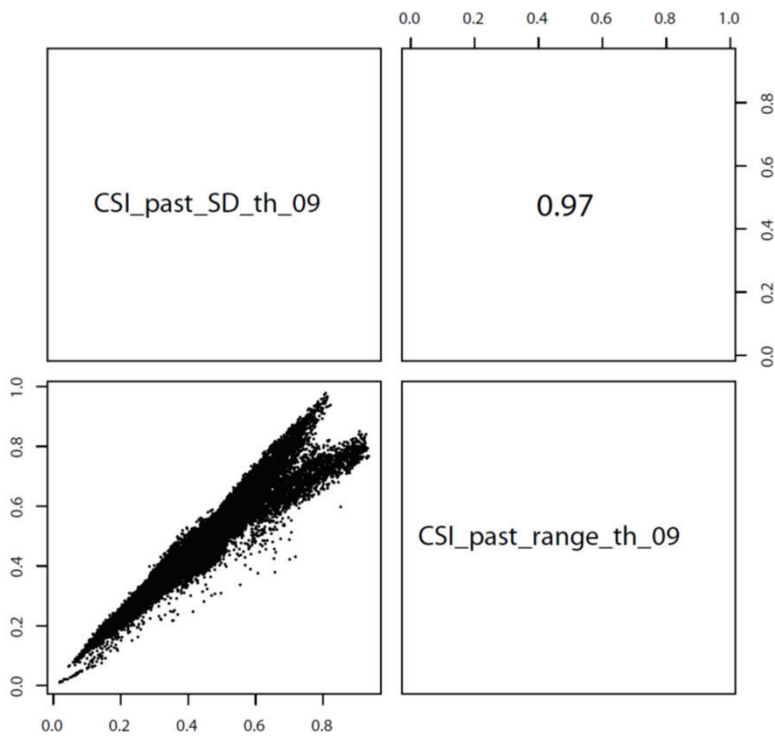
[1] Herrando-Moraira, S. *et al*. Raster_layers_R_scripts.zip. *figshare* https://doi.org/10.6084/m9.figshare.14672637 (2021).

(a)

Time periods with sea-level below current level

T1, T3, T5, T6, T7, T8, T9

In deep blue, stable regions that only emerged during the LGM period (T5)

CSI-past
High: 1
Low: 0

(b)

Antarctica not included in T4 period (Last Interglacial,130 ka)

In red, areas affected by sea-level rise during warm periods T2, T4, T10

Landmasses not affected by sea-level risings

Landmasses affected by sea-level risings
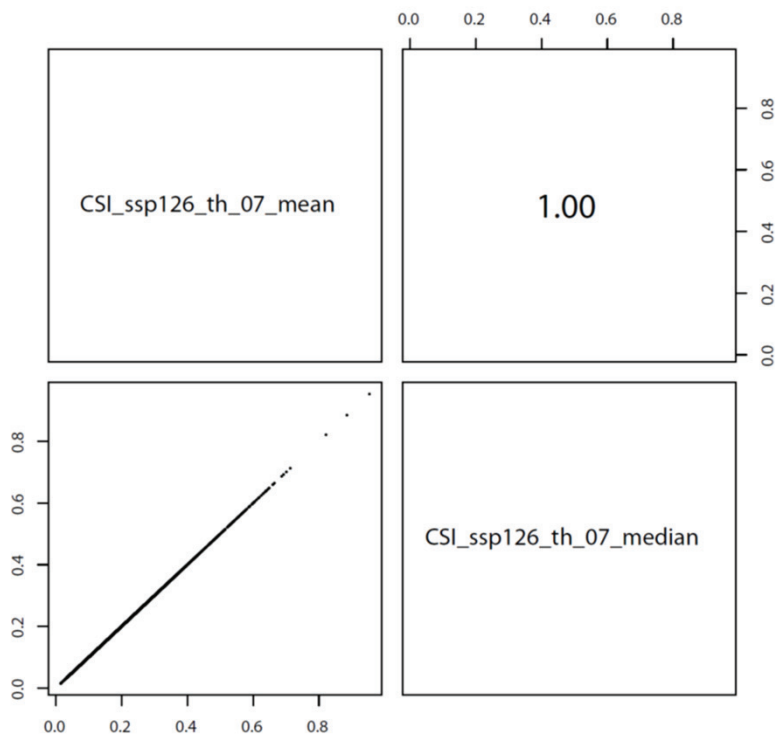(not all the 12 time periods are considered in SD calculations)

Supplementary Fig. 2 Correlation values (Pearson's *r*) and correlation scatterplots of Technical validation procedure (see Table 3). The graphics follow the same order as in Table 3.
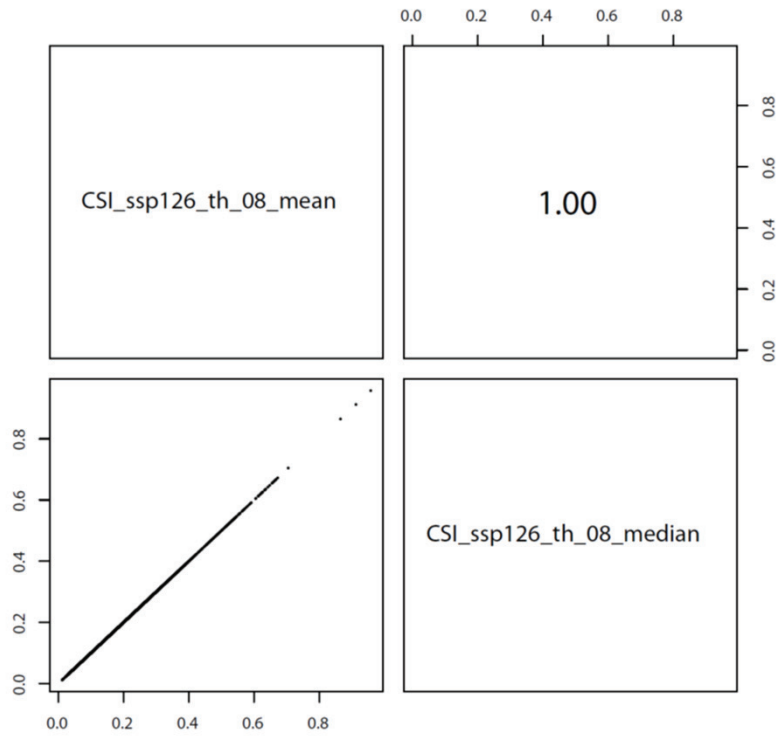

threshold $r = 0.7$ SD vs $r = 0.7$ range

threshold $r = 0.8$ SD vs $r = 0.8$ range
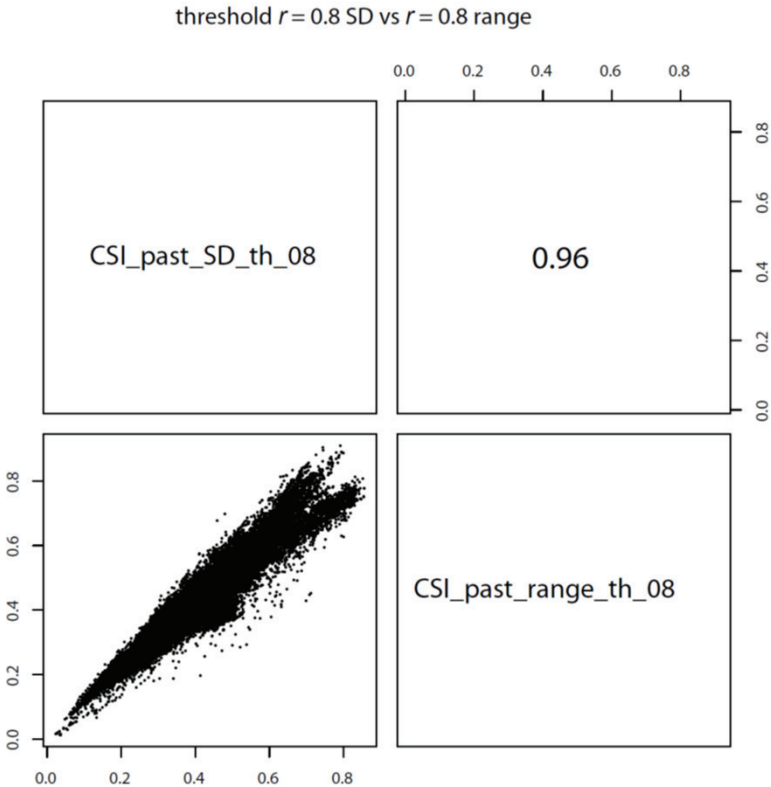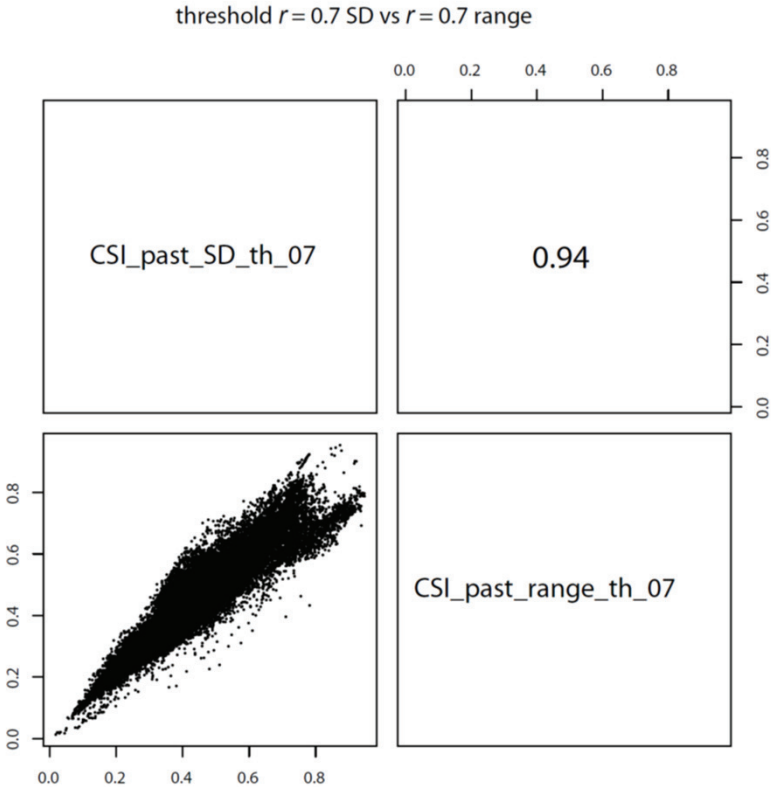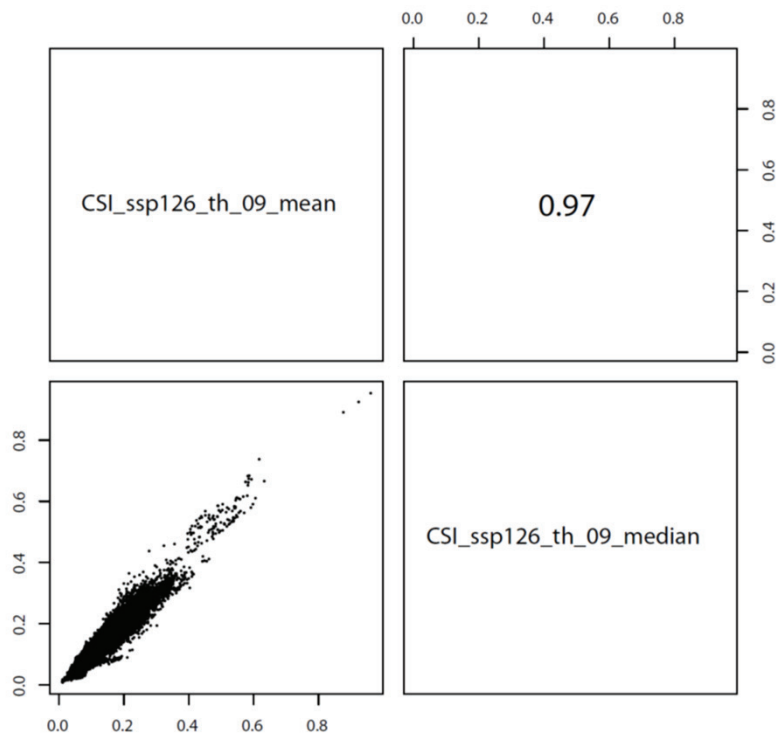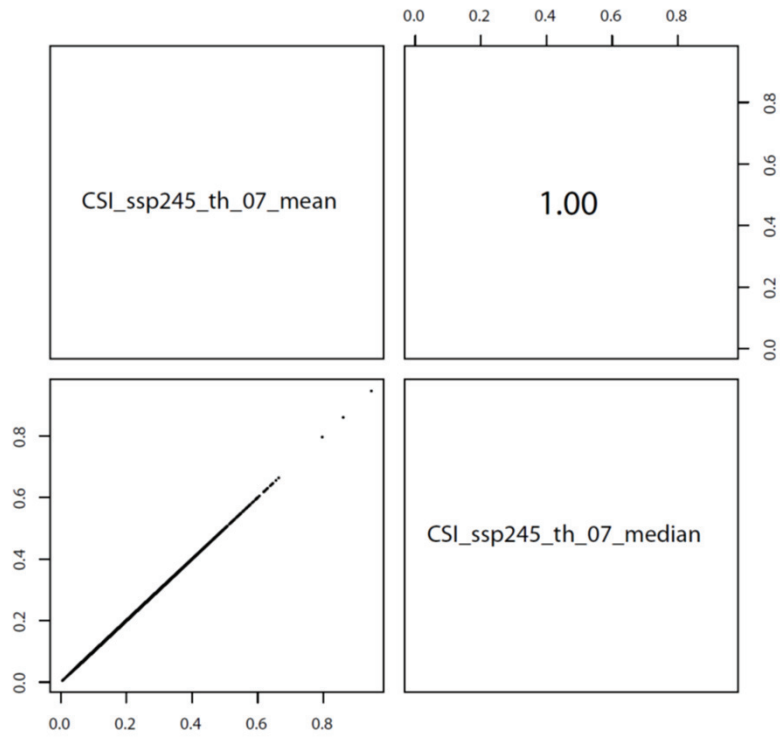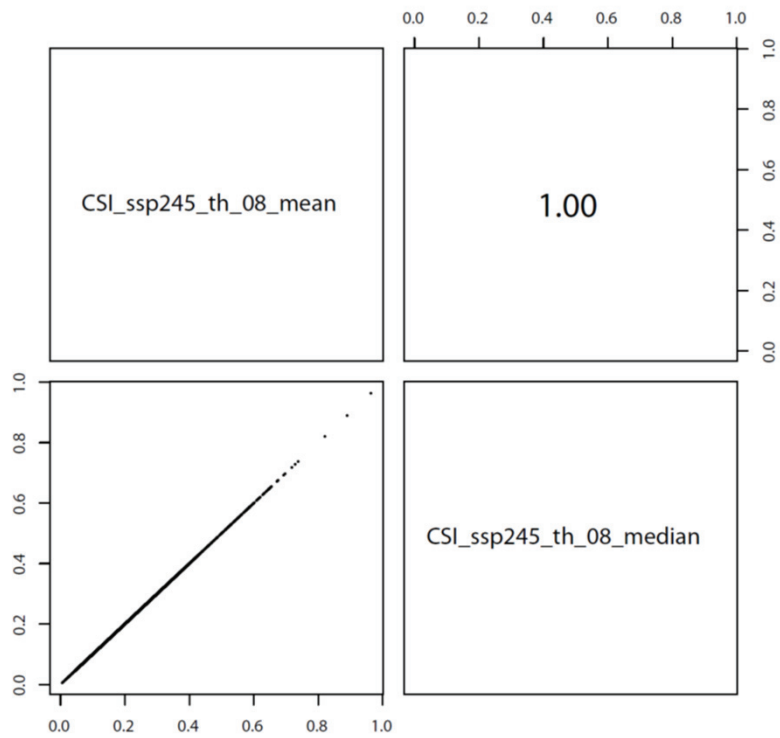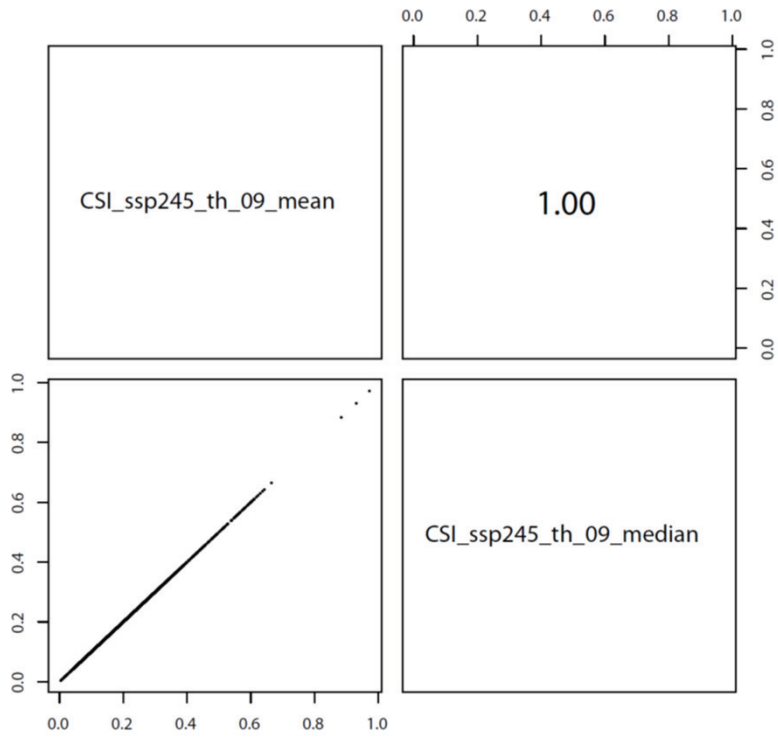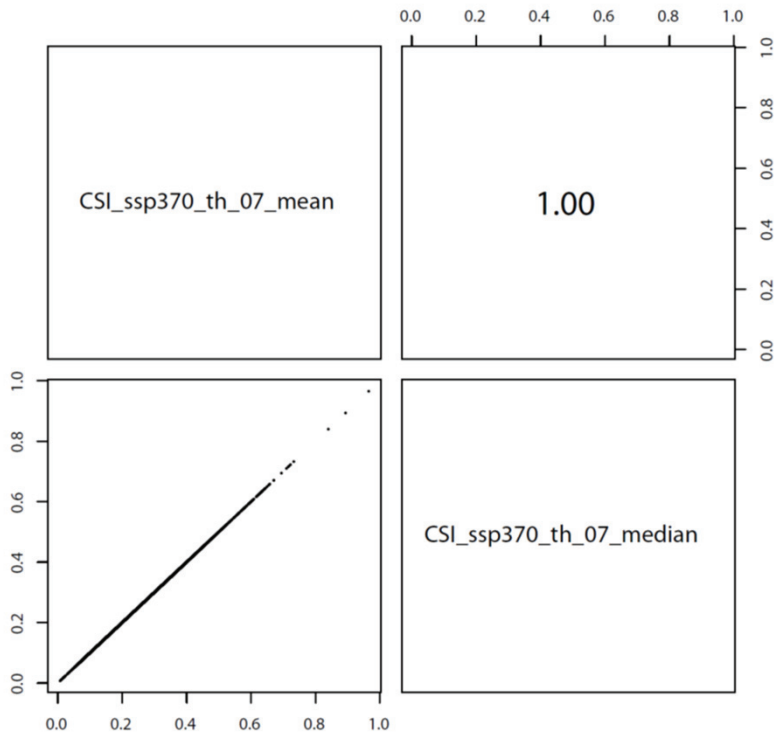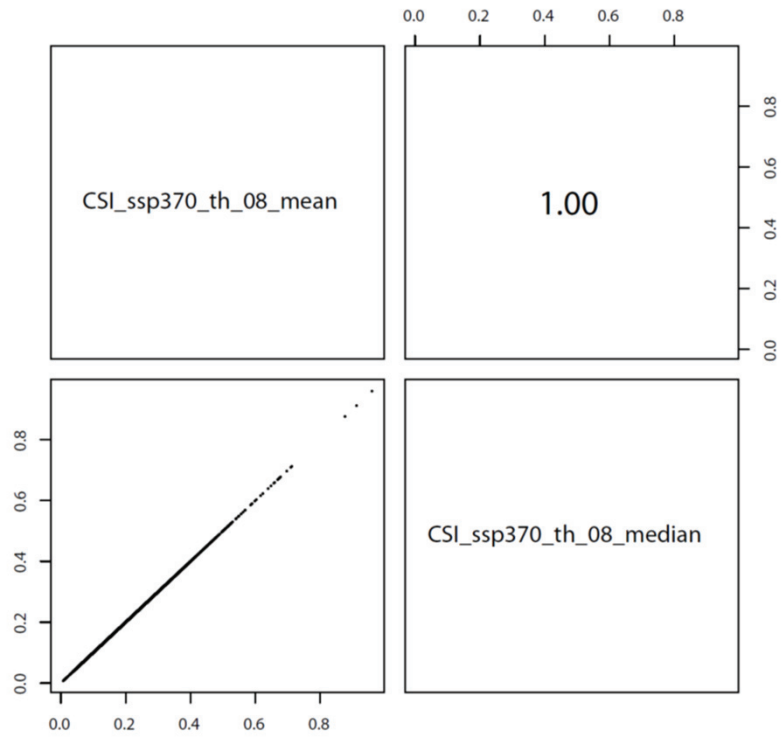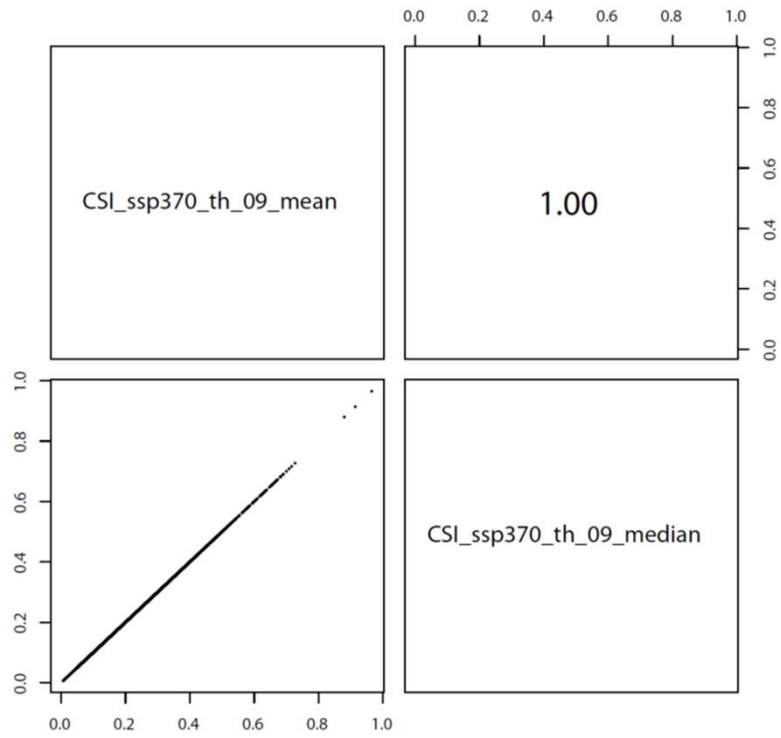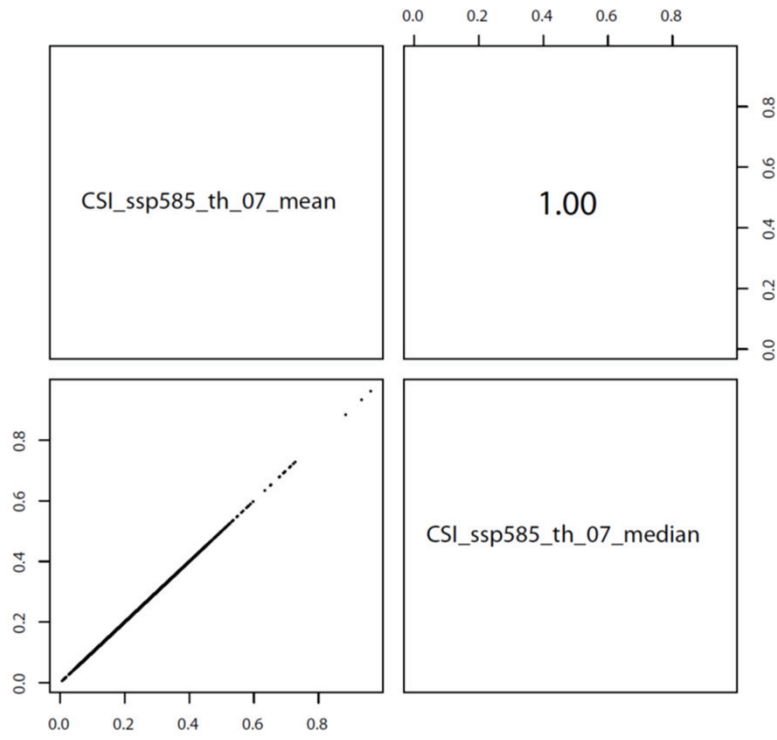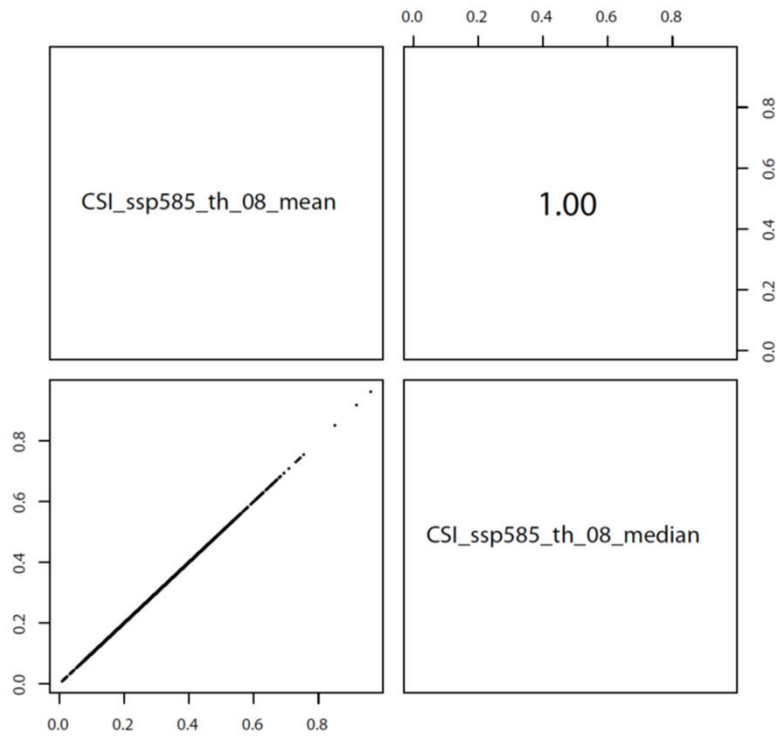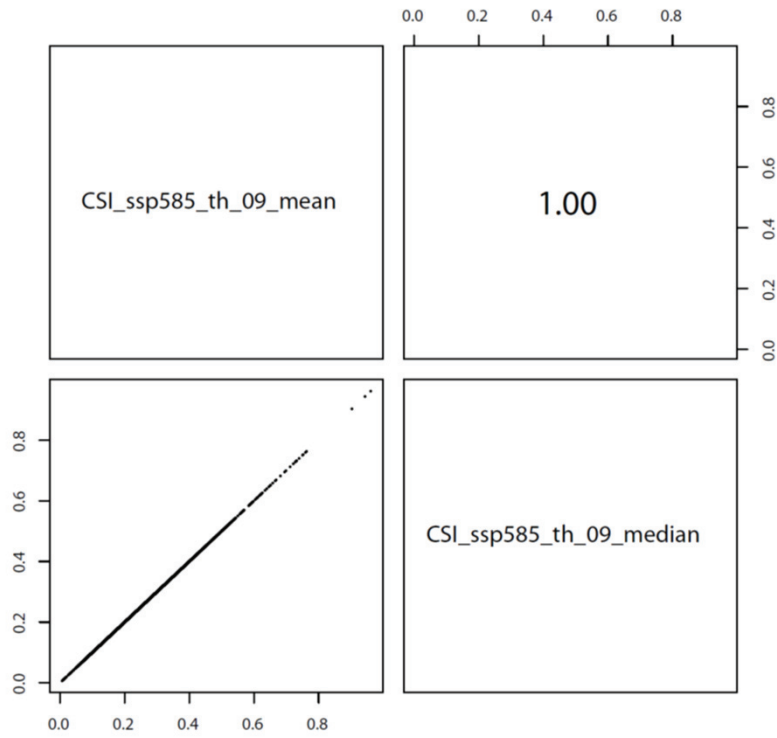
threshold $r = 0.9$ SD vs $r = 0.9$ range
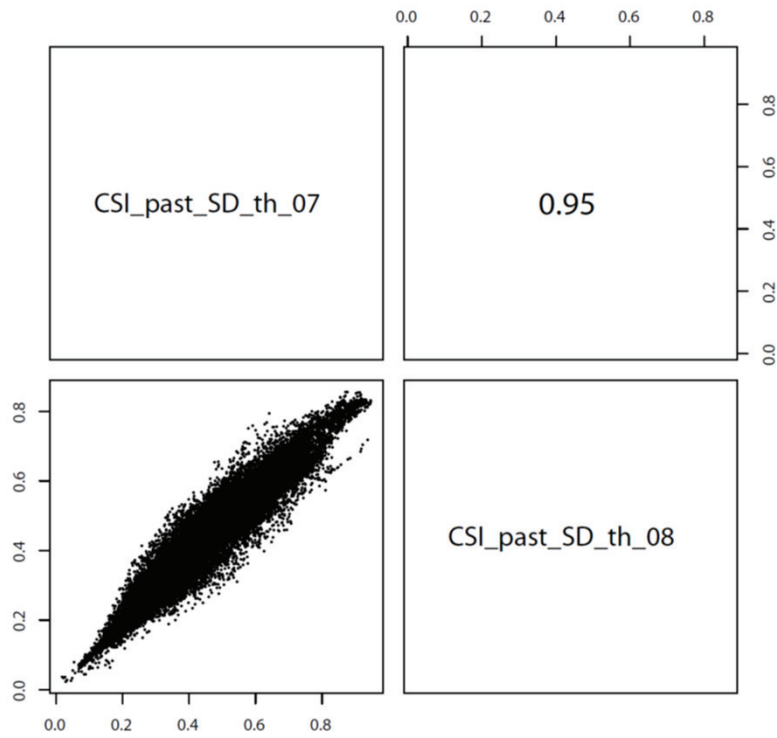

threshold $r = 0.7$ mean vs $r = 0.7$ median

threshold $r = 0.8$ mean vs $r = 0.8$ median
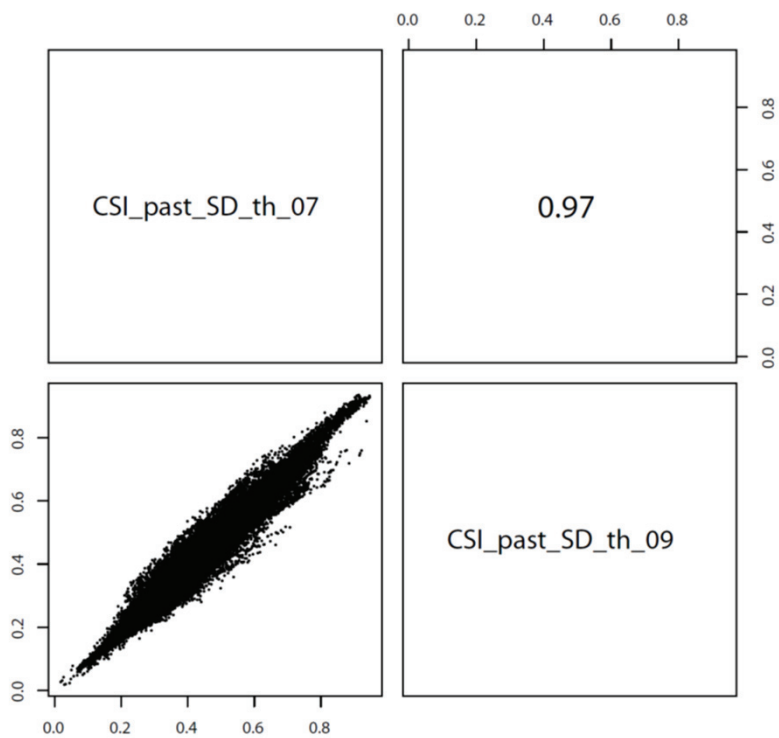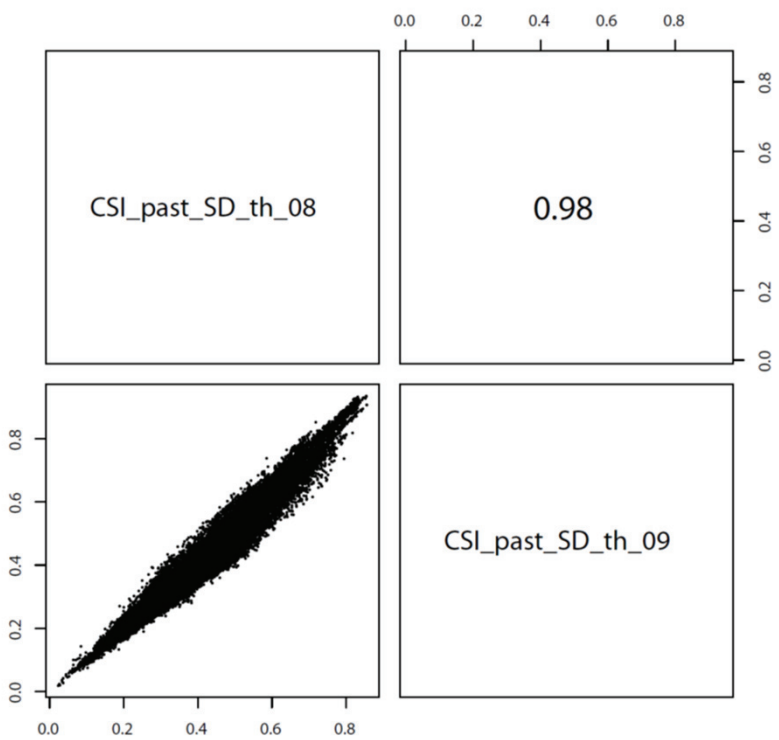

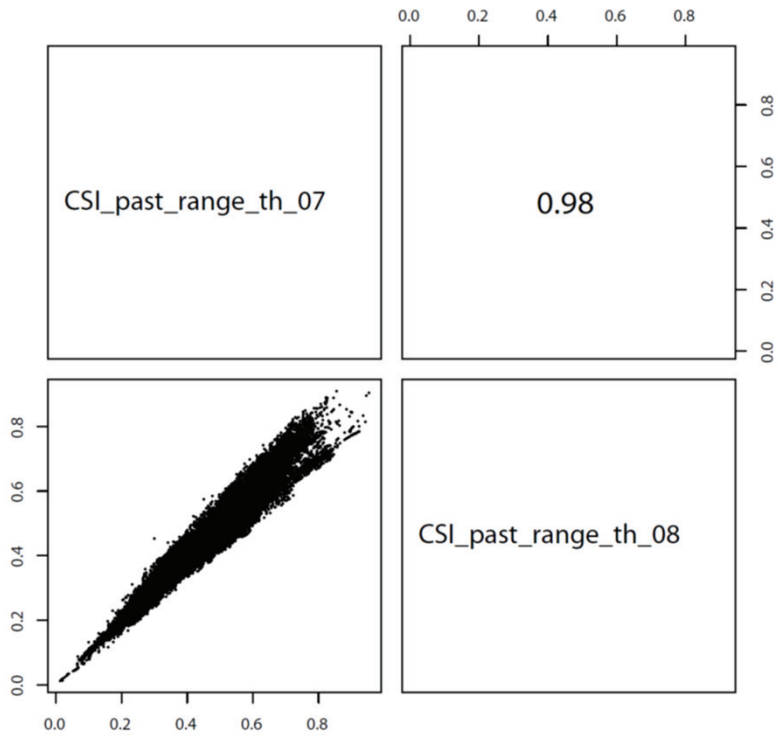threshold $r = 0.9$ mean vs $r = 0.9$ median

threshold r = 0.7 mean vs r = 0.7 median

threshold r = 0.8 mean vs r = 0.8 median

threshold $r = 0.9$ mean vs $r = 0.9$ median

threshold $r = 0.7$ mean vs $r = 0.7$ median

threshold $r = 0.8$ mean vs $r = 0.8$ median

threshold $r = 0.9$ mean vs $r = 0.9$ median

threshold *r* = 0.7 mean vs *r* = 0.7 median

threshold *r* = 0.8 mean vs *r* = 0.8 median
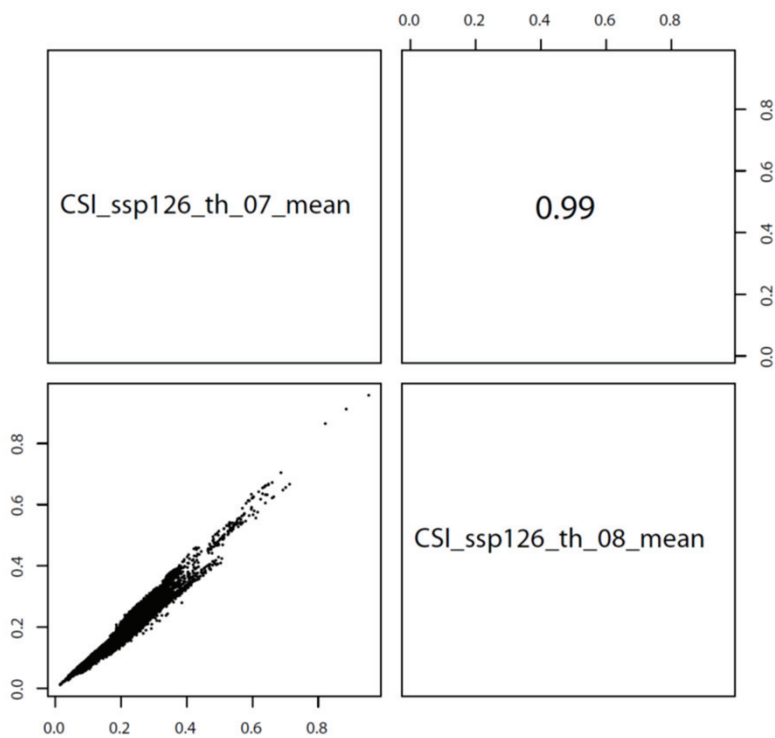
threshold $r = 0.9$ mean vs $r = 0.9$ median

threshold $r = 0.7$ vs $r = 0.8$
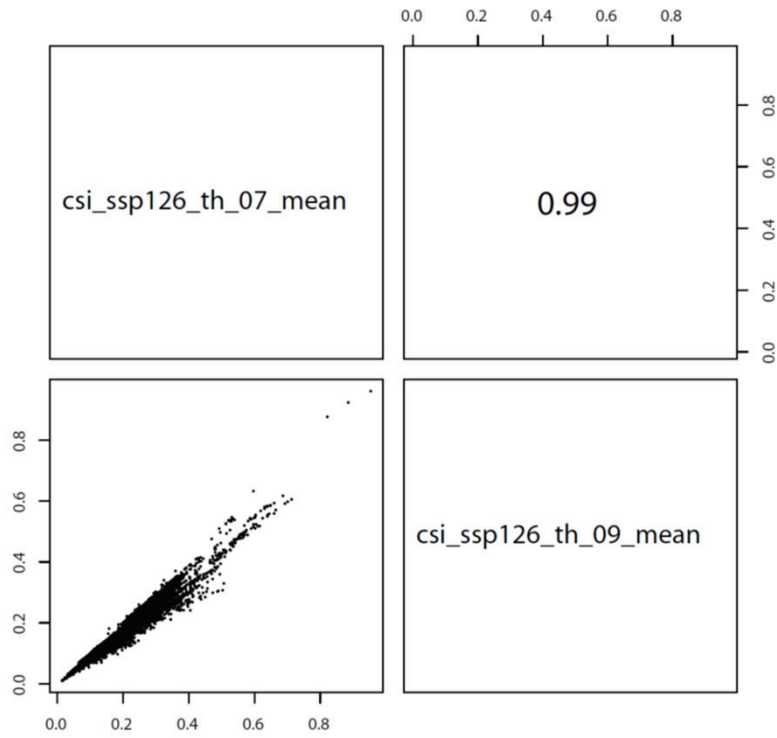
threshold $r = 0.7$ vs $r = 0.9$
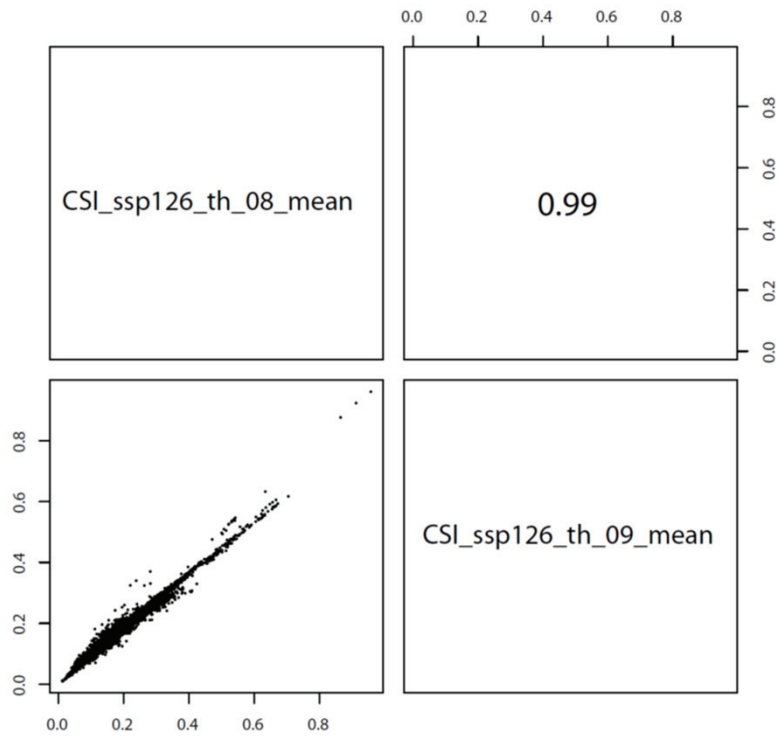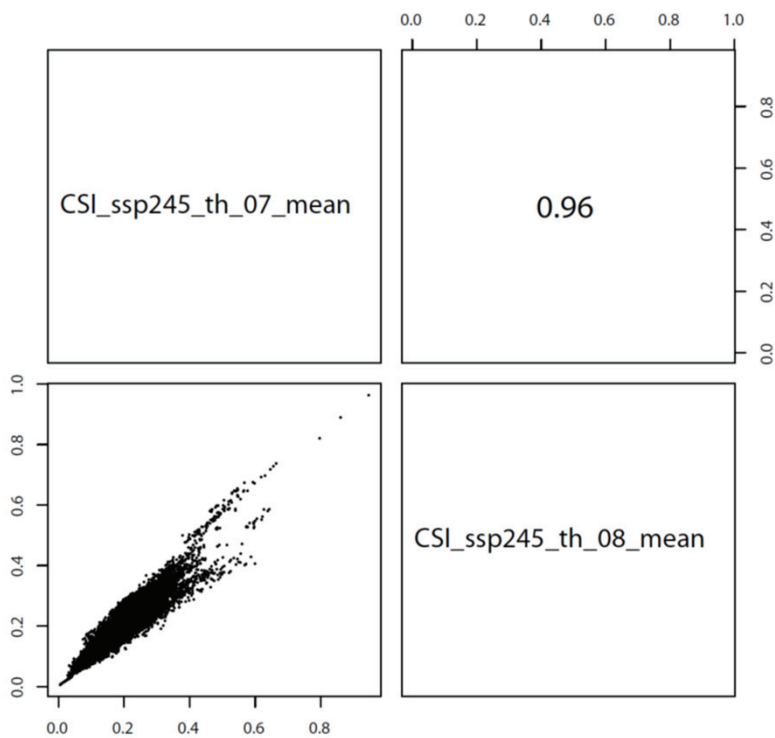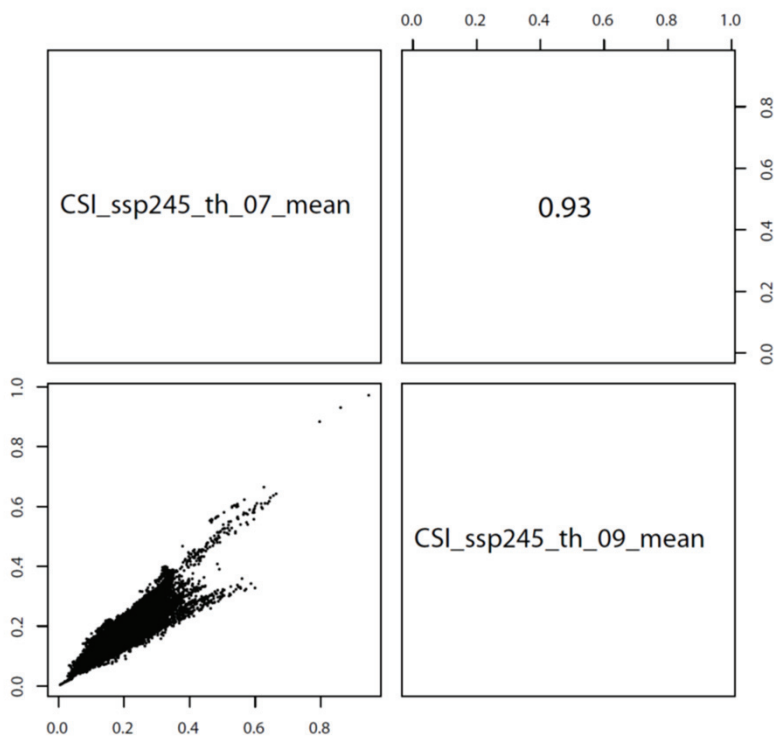

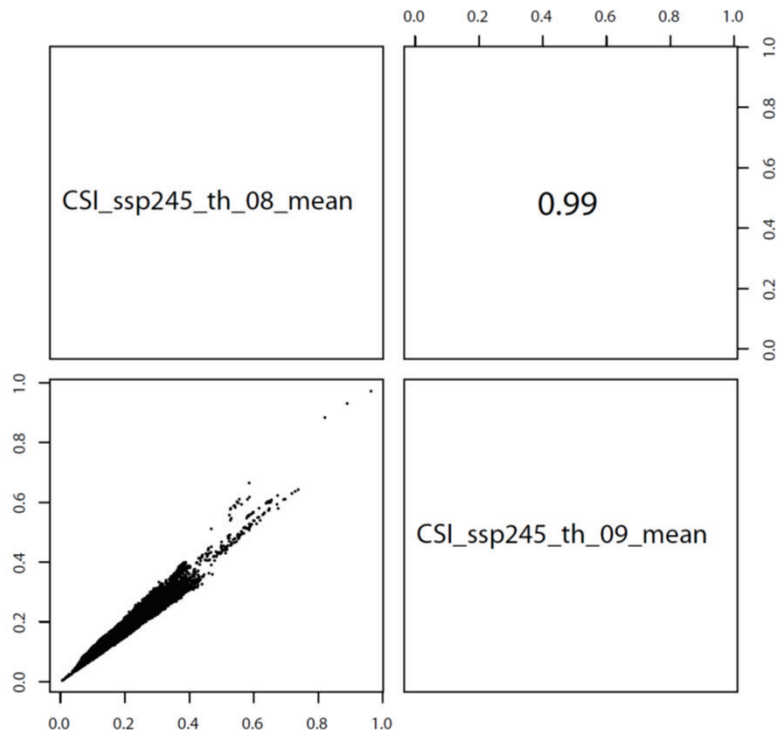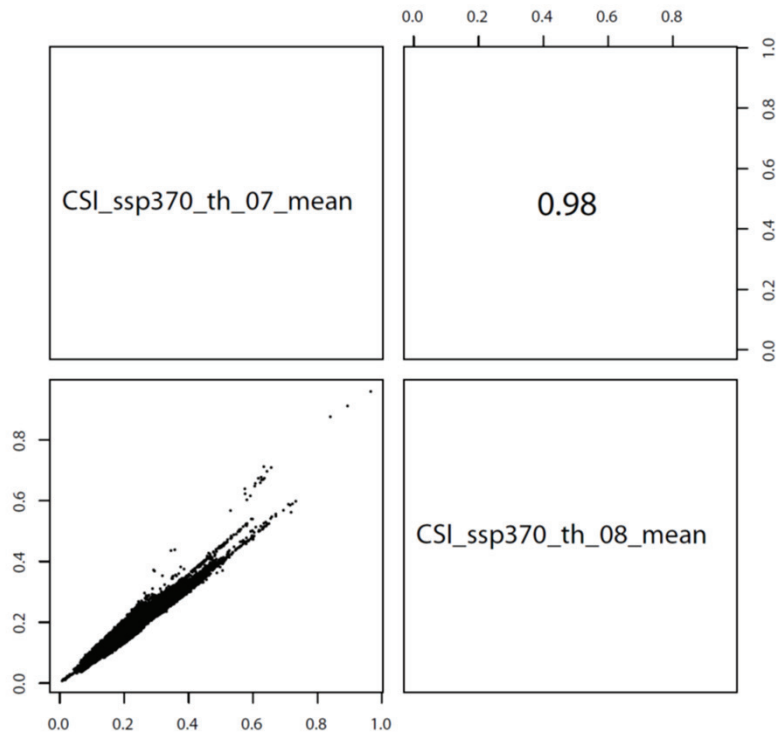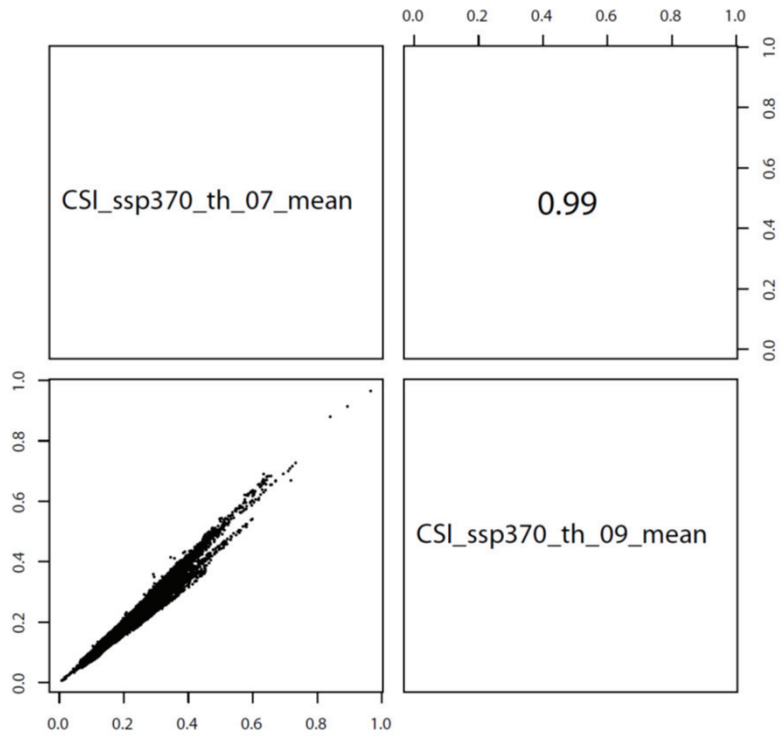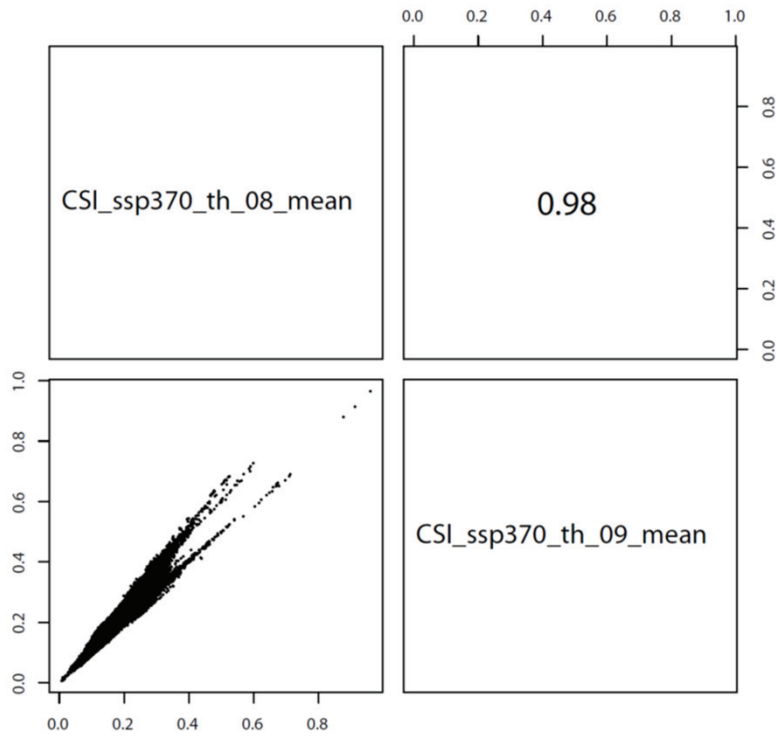## threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

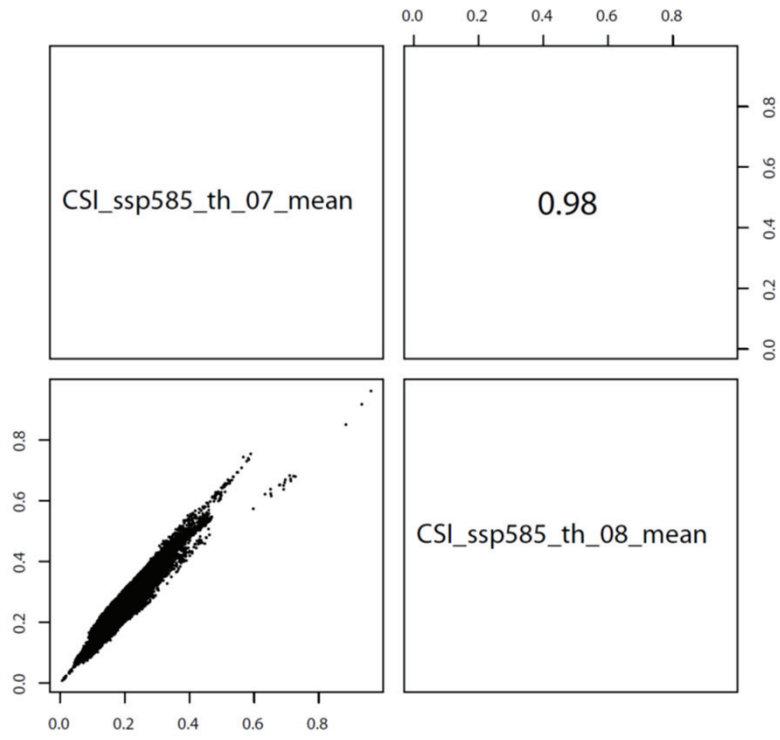## threshold $r = 0.7$ vs $r = 0.8$
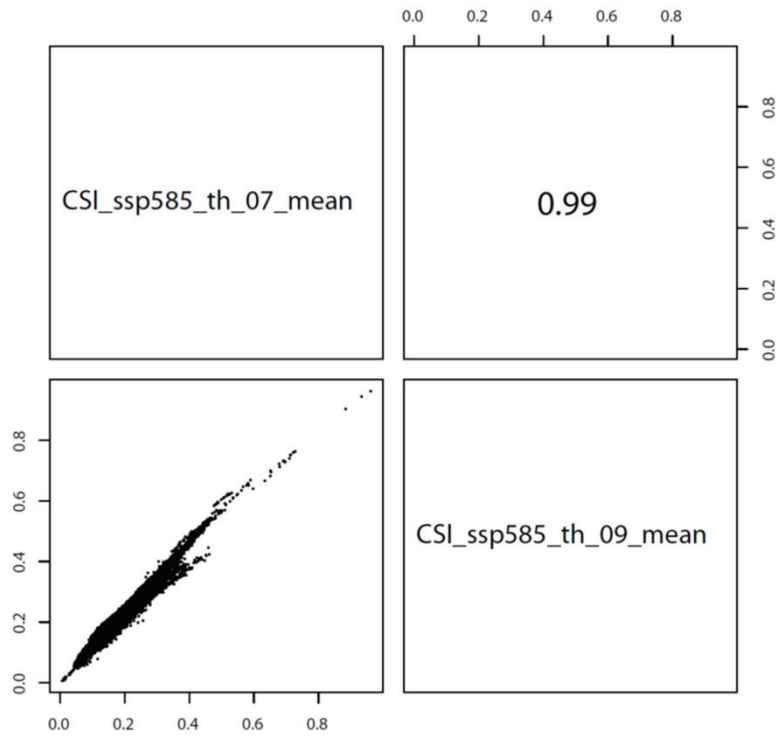

13

threshold $r = 0.7$ vs $r = 0.9$
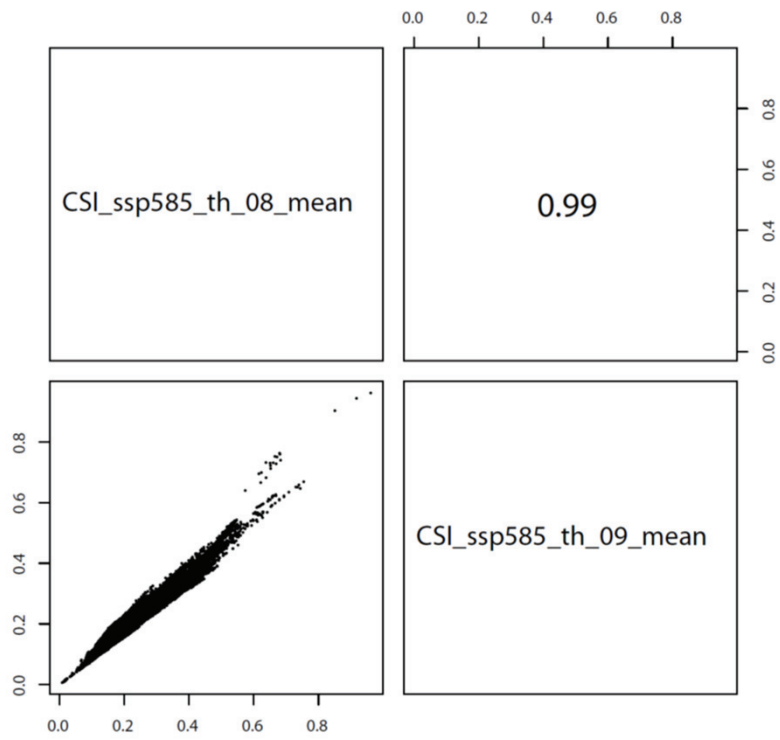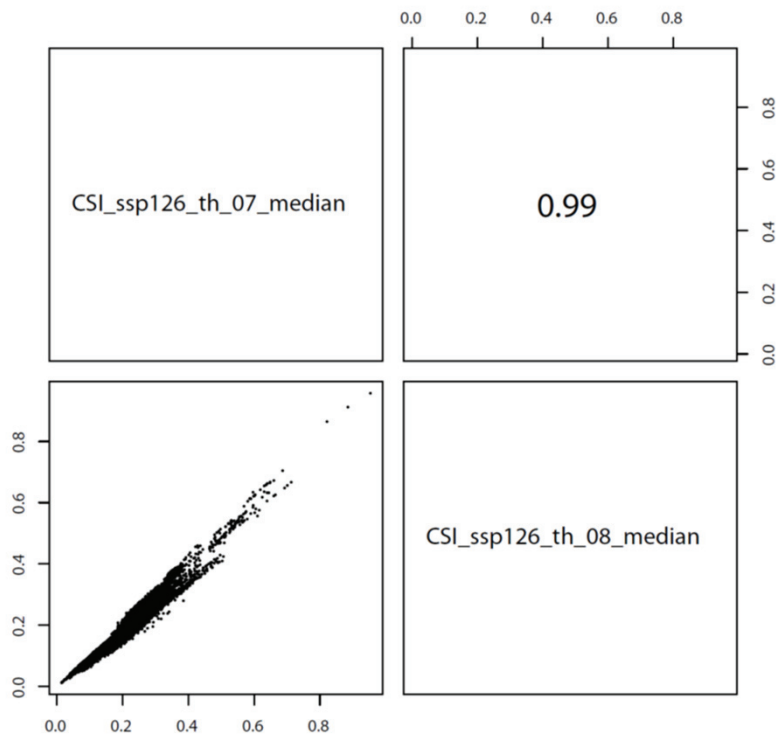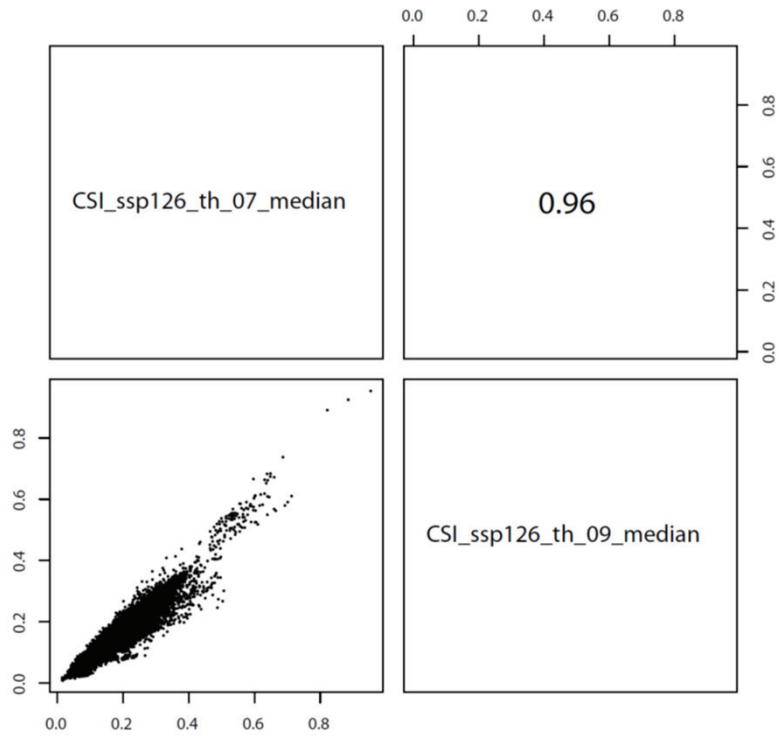

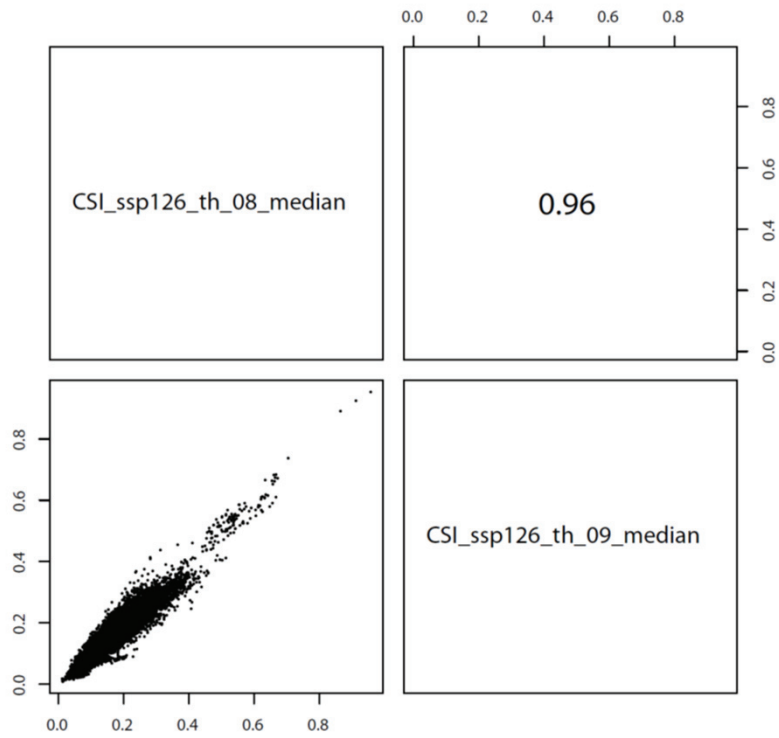threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

CSI_ssp585_th_08_mean — 0.99 — CSI_ssp585_th_09_mean

threshold $r = 0.7$ vs $r = 0.8$

CSI_ssp126_th_07_median — 0.99 — CSI_ssp126_th_08_median

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

CSI_ssp245_th_07_median

0.96

CSI_ssp245_th_08_median

threshold $r = 0.7$ vs $r = 0.9$

CSI_ssp245_th_07_median

0.93

CSI_ssp245_th_09_median

threshold $r = 0.8$ vs $r = 0.9$
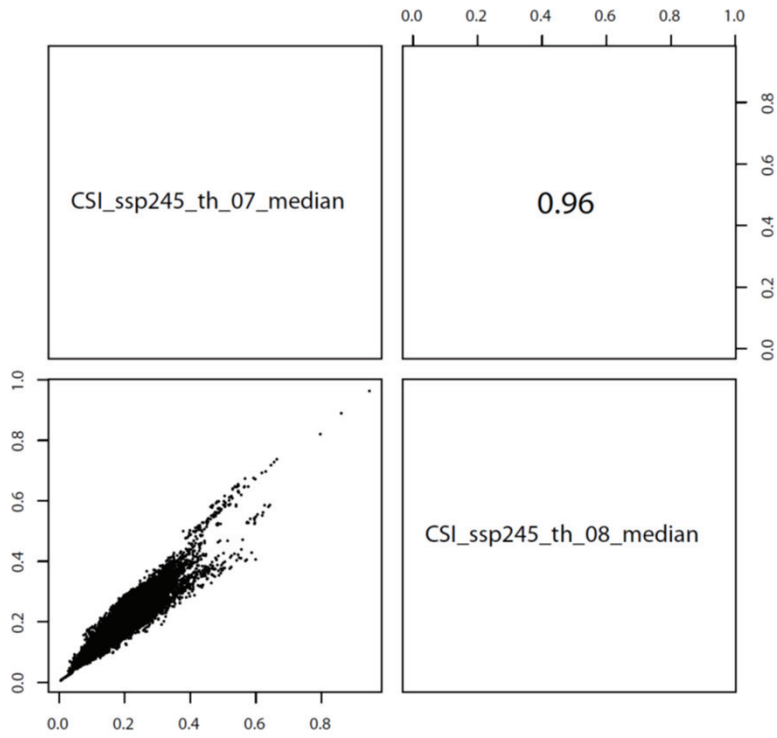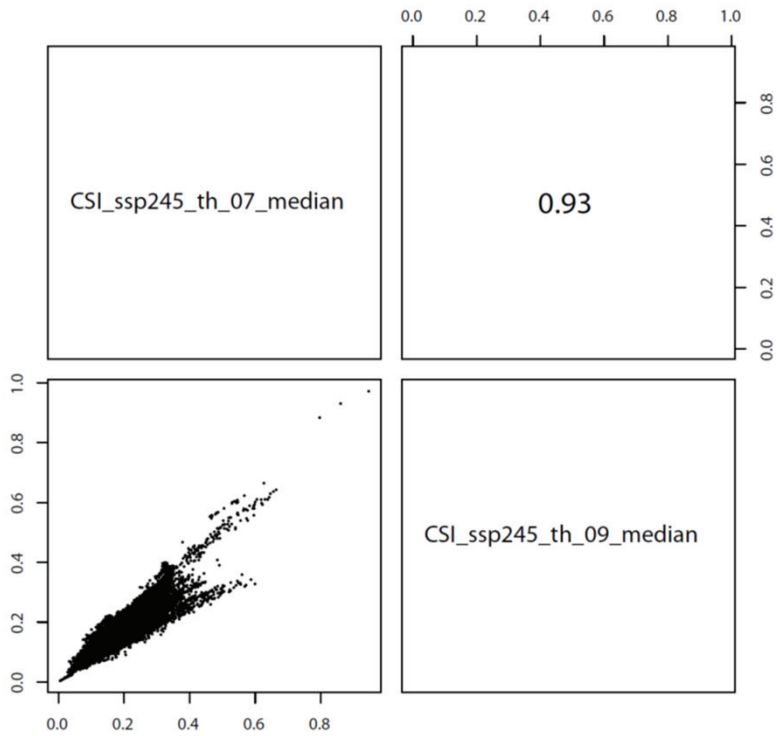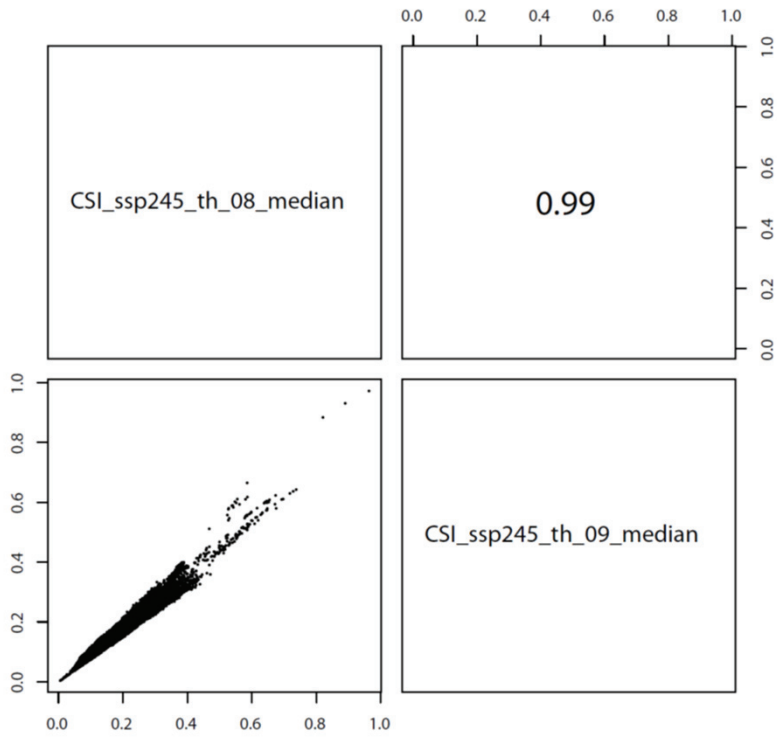

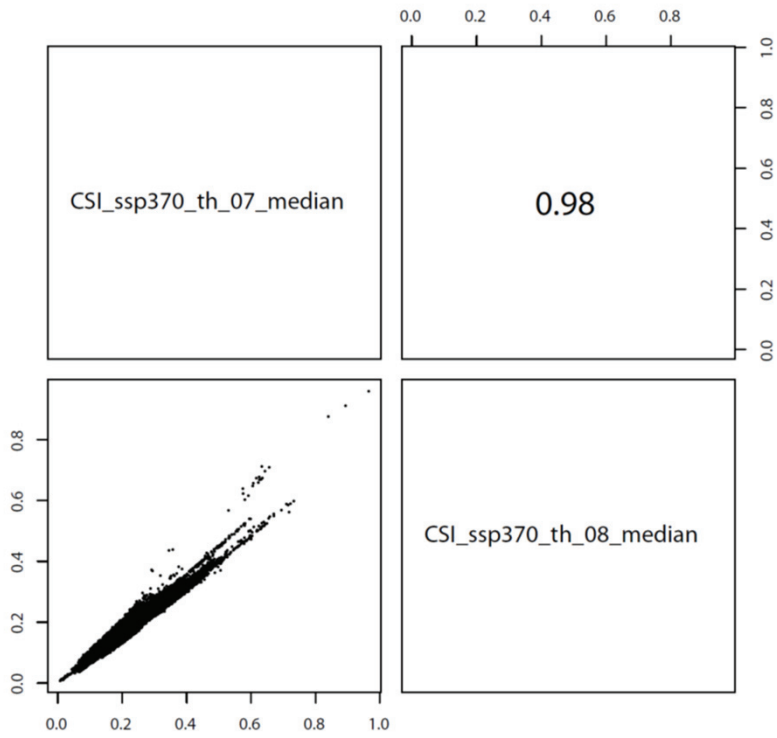## threshold $r = 0.7$ vs $r = 0.8$
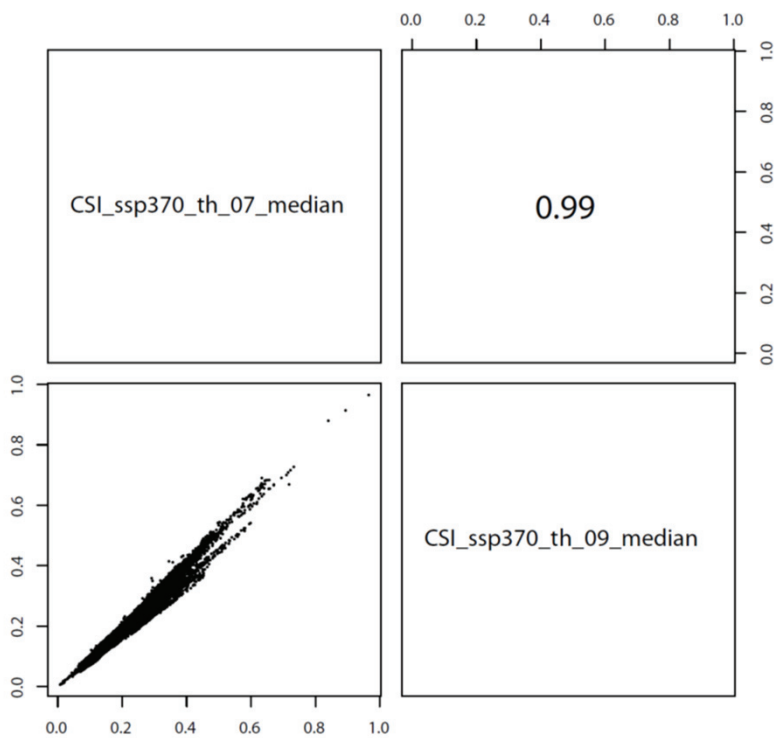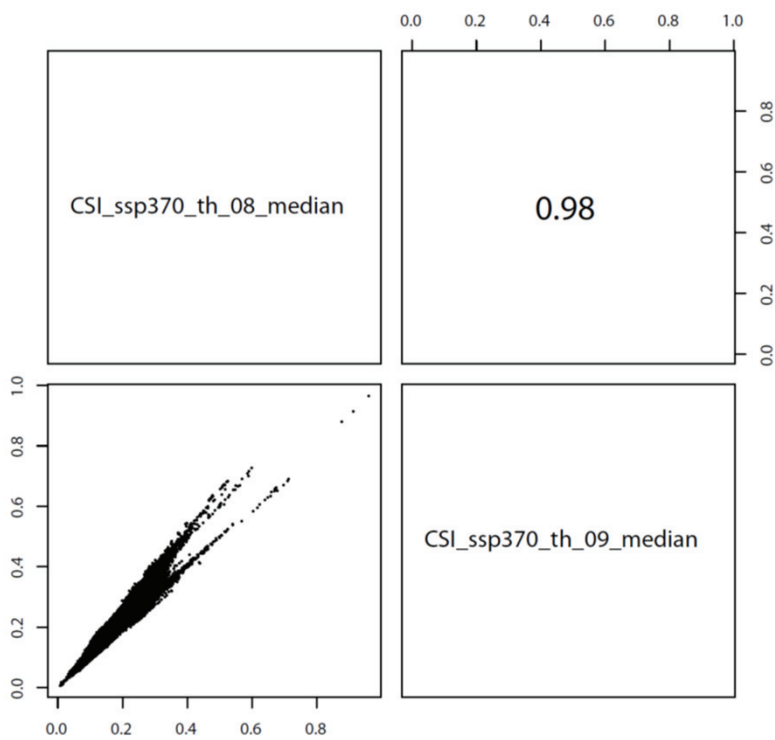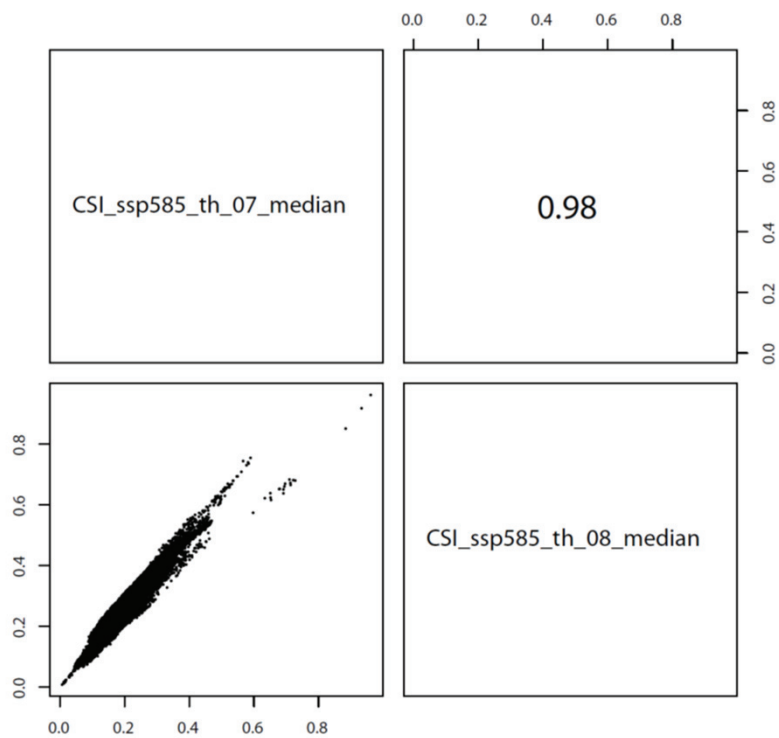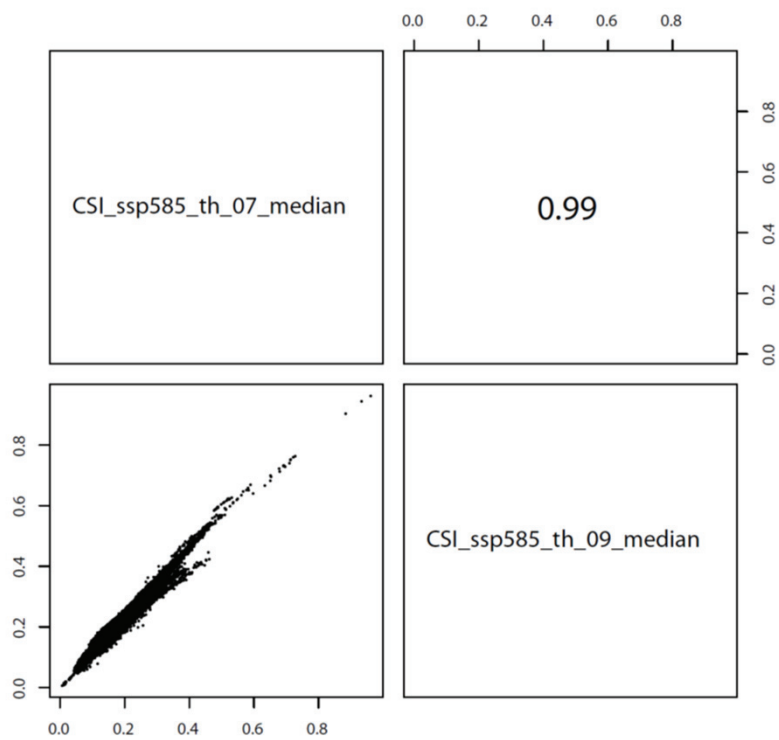
threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$

threshold $r = 0.7$ vs $r = 0.8$

threshold $r = 0.7$ vs $r = 0.9$

threshold $r = 0.8$ vs $r = 0.9$