

FDA Online resources:

<http://www.functionaldata.org>

Software:

Website for the R packages for FDA on CRAN

<https://cran.r-project.org/web/views/FunctionalData.html>.

General FDA package in support of Ramsay and Silverman (2005)

[fda](#) (CRAN)

FDA in the tidyverse framework

[tidyfun](#) (GitHub)

R packages for biological applications of FDA on Bioconductor

[NarrowPeaks](#): Analysis of Variation in ChIP-seq using Functional PCA Statistics

[funChIP](#): Clustering and Alignment of ChIP-Seq peaks based on their shapes

[IWTomics](#): Interval-Wise Testing for Omics Data

[fCCAC](#): Functional Canonical Correlation Analysis to evaluate Covariance between nucleic acid sequencing datasets

[MMDiff2](#): Statistical Testing for ChIP-Seq data sets

Other R packages for biological applications of FDA

[FUNNEL-GSEA](#): FUNctioNal ELastic-net regression in time-course gene set enrichment analysis

[polyaPeak](#): Reranking ChIP-seq peaks with peak shape information

[FGWAS](#): Functional Genome Wide Association analysis

Books:

Ramsay, J. O. and Silverman, B.W. (2002) *Applied functional data analysis: methods and case studies*. Springer-Verlag New York, ISBN 978-0-387-95414-1.

Ramsay, J. O. and Silverman, B.W. (2005) *Functional data analysis*. 2nd ed. Springer-Verlag New York, ISBN 978-0-387-40080-8.

Ferraty, F. and Vieu, P. (2006) *Nonparametric Functional Data Analysis*. Springer-Verlag New York, ISBN 978-0-387-30369-7.

Ramsay, J. O., Hooker, G. and Graves, S. (2009) *Functional Data Analysis with R and MATLAB*. Springer-Verlag New York, ISBN 978-0-387-98184-0.

Horváth, L. and Kokoszka, P. (2012) *Inference for Functional Data with Applications*. Springer-Verlag New York, ISBN 978-1-4614-3654-6.

Kokoszka, P. and Reimherr, M. (2017) *Introduction to Functional Data Analysis*. Chapman and Hall/CRC, ISBN 978-1-498-74634-2.

Other references:

Wang, J.-L., Chiou, J.-M. and Müller, H.-G. (2016) Functional Data Analysis. *Annual Review of Statistics and Its Application*. 3:257-295.