Statistical and Data Analysis Package in SWIFT

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- Design and implementation of an Object-Oriented Math + Statistics package designed for rapid and robust data analysis,
- Comprehensive suite of statistical tools, fitting tools, and modeling functions.
- Design centered on abstract interfaces (Swift Protocols) and comprehensive + carefully designed class structures.
- Features single/multi-dimensional functions, including common functions such as Bessel functions, Laguerre, and Legendre polynomials, classes for vectors, matrices and related linear algebra tools, a limited set of physics tools including rotations, Lorentz vectors, etc, multi-dimensional histograms, fast and robust moments calculation, calculation of correlation functions, frequentist statistical tests, maximum likelihood and least square fits, and extensible random number generation tools, as well as basic plotting capabilities.
- Given SWIFT's interoperability with other languages, the presented package should be easy to integrate within existing computing environments such as ROOT.