

Data Analysis. List of Cases and Programs

N: Integer, f, x: real number

One Parameter Estimation	parameter	Program
Proportion/Fraction	$f=\{0,1\}$	ProportionParameter.py
Population Identification	ID	PopulationID.xls
Population size, Total	N	TagAndRelease.py
Population size, Tagged	N	MarkedPopulation.py
Population size, Serially tagged	N	FamilySize.py
Rare count data, no background	k (rate)	RareCounts.py
Rare count data, with background	k (rate)	RareCountsBackgnd.py
Set of decay times/lengths in experimental window	time/length	DecayTimeLength.py
Two+ Parameter Estimation	parameters	Program
Difference between two fraction/proportion parameters	Δf	DifferenceProportionParameter.py
Mean, Standard deviation (normal Gaussian noise model)	μ, σ	MeanStd.py
Mean, Standard deviation (Cauchy noise model)	μ, σ	MeanStdFatTailNoise.py
Difference in means and/or standard deviations from raw data	$\Delta \mu, \Delta \sigma$	DifferenceInMeans.py
Difference in means given previous sample, μ , and σ (without raw data)	$\Delta \mu, \Delta \sigma$	DiffMeansFromStats.py
Difference in means, small N	$\Delta \mu, \Delta \sigma$	DifferenceInMeansSmallN.py
Comparison of rank (non-parametric) data	$\Delta \mu$	RankTest.py then DifferenceInMeans.py
Means, Standard deviations for multiple sets of data using Gelman's hierarchical model with Mean, Standard deviation hyperparameter	hierarchical μ, σ and set of $\{\mu, \sigma\}$	MultiMeanHierarchy.py
Straight line fit $y=mx+b$	m, b	LinearRegression.py
Survival or failure Times/Length	τ, r	SurvivalWeibull.py
	N Parameters	Program
Curve fit (polynomial)	$y = \sum A_n x^n$	CurveFitBIC.py
Find periods in time series	frequencies	PeriodicSeries.py
Utility programs		
Plot category data		boxPlot.py
Make histogram plot	linear/log y axis	histogramPlot.py
Make posterior pdf for the difference in a parameter given two posterior pdfs	ΔX	DiffPdf.py