

Application	'circular' package for R	'CircStsts' package for R	MATLAB functions to analyze directional data	CircStat for MATLAB	EZ-ROSE	Oriana	GEorient	SpheriStat	Stereo32	OSXStereonet
Latest version	0.4-2	0.2-4		2010d	1.0	3.21	9.4.5	3.1	1.0.3	1.3
Applicable data	Circular	Circular	Circular	Circular	Circular	Circular	Sphrical	Circular/Sphrical	Sphrical	Circular/Sphrical
User interface	CUI	CUI	CUI	CUI	GUI	GUI	GUI	GUI	GUI/CUI	GUI
Developer	Dr. Ulric Lund Dr. Claudio Agostinelli	Dr. Ulric Lund Dr. Claudio Agostinelli	Thomas A. Jones	Philipp Berens	Jaco H. Baas, Ph.D.	Kovach Computing Services	Holcombe Coughlin Oliver	Pangea Scientific	Dr. Klaus Röller Dr. Claudia A. Trepmann	Dr. Nestor Cardozo Rick W. Allmendinger, Ph.D.
URL or citation	http://www.r-project.org/	http://www.r-project.org/	Jones (2006a, 2006b, 2010)	Berens (2009)	Baas (2000)	http://www.kovcomp.com/	http://www.holcombecoughlinoliver.com/default.htm	http://www.pangaeasci.com/	http://www.ruhr-uni-bochum.de/hardrock/downloads.htm	http://homepage.mac.com/nfcd/work/programs.html
Platform	Windows, Mac and Unix with R	Windows, Mac and Unix with R	Windows and Unix with MATLAB 6	Windows with MATLAB	Windows and Mac with Microsoft Excel	Windows 98SE/NT 4 or later	Windows	Windows 95 or later	Windows 2000 or later	Mac OS X
Price	Free	Free	Free	Free	Free	USD 400 (commercial) USD 240 (academic)	AUD 110 (commercial) Free (academic)	USD 300	Free	Free
Graphics										
Circular plot	√ 'plot.circular'	√ 'circ.plot'		√		√				
Linear histogram	√ 'hist*'	√ 'hist*'			√ Two-cycle histogram	√				
Rose diagram (linear scaling)	√ 'rose.diag'		√	√		√	√	√	√	√
Rose diagram (equal-area scaling)	√ 'rose.diag'	√ 'rose.diag'	√		√ Work with CorelDraw 6 or later	√	√	√	√	
Stereographic projection							√	√	√	√
P-P plot (sample-theoretical uniform)	√ 'plot*'	√ 'plot*'	√ (Named Q-Q plot)			√				
P-P plot (sample-theoretical von Mises)	√ 'pp.plot'	√ 'pp.plot'	√ (Named Q-Q plot)			√				
Q-Q plot (sample-sample)	√ 'plot' or 'qqplot*'	√ 'plot' or 'qqplot*'				√				
Descriptive statistics										
Mean resultant length	√ 'rho.circular'	√ 'est.rho'	√	√	√	√	√	√	√	√
Circular variance	√ 'var.circular'			√		√	√	√		
Circular standard deviation	√ 'sd.circular'			√	√	√	√	√		
Circular disparsion		√ 'circ.disp'					√			
Circular range	√ 'range.circular'	√ 'circ.range'								
Mean direction	√ 'mean.circular'	√ 'circ.mean'	√	√	√	√	√	√	√	√
Median direction	√ 'medianCircular'			√		√	√			
von Mises maximum likelihood estimates	√ 'mle.vonmises'	√ 'vm.ml' or 'est.kappa'	√	√	√	√	√	√		
Confidence interval for mean direction	√ 'mle.vonmises' or 'mle.vonmises.bootstrap.ci'	√ 'vm.bootstrap.ci'	√	√	√	√	√	√		
Confidence interval for concentration parameter	√ 'mle.vonmises' or 'mle.vonmises.bootstrap.ci'	√ 'vm.bootstrap.ci'	√							
Statistical tests										
Kuiper's test	√ 'kuiper.test'	√ 'kuiper'			√ Test for uniformity	√				
Watson's U^2 test	√ 'watson.test'	√ 'watson'	√		√ Test for uniformity	√				
Rayleigh's test	√ 'rayleigh.test'	√ 'r.test' or 'v0.test'	√	√	√ Test for unknown μ	√		√		
Multi-sample Watson-Williams test	√ 'aov.circular'		√	√		√				
Multi-sample homogeneity test for kappa	√ 'equal.kappa.test'		√							
Multi-sample uniform scores test (Mardia-Watson-Wheeler test)	Alternative Rao's test for homogeneity is available by 'rao.test'	Alternative Rao's test for homogeneity is available by 'rao.homogeneity'				√				
Two-samples Kuiper's test				√						
Two-samples Watson's test	√ 'watson.two.test'	√ 'watson.two'				√				
Rao's tests for homogeneity	√ 'rao.test'	√ 'rao.homogeneity'								
Correlation and regression										
Circular-circular correlation (Jupp and Mardia, 1980)	√ 'cancor*'	√ 'cancor*'	√			√				
Circular-circular correlation (Jammalamadaka and Sarma, 1988)	√ 'cor.circular'	√ 'circ.cor'		√						
Linear-circular correlation (Mardia, 1976; Johnson and Wehrly, 1977)	√ 'lm*'	√ 'lm*'	√	√		√				
Circular-circular regression (Sarma and Jammalamadaka, 1993)	√ 'lm.circular'	√ 'circ.reg'								
Linear regression on circular response (Fisher and Lee, 1992)	√ 'lm.circular'									
Circular regression on linear response	√ 'lm*'	√ 'lm*'								
Outlier detection										
Fitting a mixture of two von Mises distributions			√							
Remarks	R-optimized version of CircStats. Most statistic are calculable by combination of some basic commands. * R standard command.	Original S-plus ported to R. Most statistic are calculable by combination of some basic commands. * R standard command.								Refurbished version of Rick Allmendinger's Stereonet 6.3.3.