

Modelling and simulation of directional distributions

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Directional data analysis is concerned with statistical analysis on various non-Euclidean manifolds, starting with circle and the sphere, and extending to related manifolds such as Stiefel manifolds, Grassmann manifolds, rotation groups, shape spaces, and products of such manifolds.

This talk will discuss (1) the construction of suitable statistical models on these spaces, generally based on exponential families, and (2) inference and simulation for these distributions.

A recently developed method based on acceptance/rejection has greatly simplified the simulation task in a wide variety of situations.