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## **Introduction to geometric statistics**

*Statistics relies on measured distances. Geometric statistics use tools from geometry (the study of how to measure distances) to develop new statistical models and bring new understanding to existing ones. This tutorial introduces the basic principles of differential geometry and the study of manifolds. This gives us the tools to trivially understand (otherwise scary) topics such as Information Geometry, Riemannian metrics and constrained distributions. As illustrations, we will develop interpolation techniques which rely on locally defined inner products.*