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Brian Street* (street@math.wisc.edu). *Atlases in Analysis*.

A manifold is a topological space together with an atlas of coordinate charts. Many different atlases give rise to the same manifold structure, and the first thing that a student learns about manifolds is that if a problem is intrinsic to the manifold structure, it does not matter which atlas you use to study it. Contrary to this abstract principle, many techniques from analysis can be very dependent on the choice of atlas. In fact, many problems use infinitely many different choices of equivalent atlases simultaneously. In this talk, we discuss this phenomenon first in the familiar context of elliptic equations where the atlases are easy to write down explicitly, and then in the context of maximally hypoelliptic equations where one merely proves appropriate atlases exist.

This talk is aimed at people who have seen the definition of a manifold and a vector field before and are familiar with what a partial differential operator is (e.g., the Laplacian on Euclidean space). (Received January 08, 2020)