Bryant’s EDS Notes - Lecture 1
Travis Willse (ANU)

Date / Time / Location: Tue. October 18, 2011, 10:00 - 11:30, JD35.

Abstract:

Exterior Differential Systems (EDSes), which are just differentially closed ideals in the ring of differential forms on a manifold, provide a powerful and more-or-less unified approach to a rich variety of differential-geometric problems. In this talk we’ll survey the key ideas of Lecture 1 from Bryant’s ”Nine [sic] Lectures on Exterior Differential Systems,” mostly following those notes. After giving the basic definitions, we’ll explore several concrete examples, rewriting some common objects (both from differential equations and geometry) in terms of EDSes and interpreting the results. We’ll also give and discuss two basic theorems used to analyze important classes of EDSes, namely, the Frobenius and Pfaff theorems.