Applied Mathematics Seminar

Monday, April 25

12:30 pm - 1:30 pm, DON 2159

Robert Lowry, SUNY Suffolk

Gauged Poisson Structures and Compressible Free Boundary Fluids

Abstract:

Building on the work of Lewis, Marsden, Montgomery, Ratiu and Mazer, I will explore the example of a perfect compressible fluid with a free boundary. In particular, I will illustrate how the Euler equations for a compressible fluid with a free boundary (such as that observed in weather systems and oceanographic problems) can be derived from Lie-Poisson reduction scheme using a general formula for brackets on reduced principle bundles.

Audience: This talk is aimed at an audience with background in applied mathematics and physics. Students are welcome!