1038-35-14 **Marshall Slemrod*** (slemrod@math.wisc.edu), Department of Mathematics, University of Wisconsin -Madison, Madison, WI 53706. *Transonic flow and supersonic differential geometry.*

The purpose of this talk is to present some recent results done with co-authors G-Q Chen and Dehua Wang. The work involved viscous limit approaches to two apparently unrelated problems: classical transonic flow over an airfoil and isometric immersion of a two dimensional Riemannian manifold in three dimensional Euclidean space with negative Gauss curvature. Surprisingly ( perhaps) similar techniques help provide some answers to both problems. (Received December 10, 2007)