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For compressible viscous Navier-Stokes flows over a grazing corner

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ABSTRACT

In this talk I will talk about the compressible viscous steady state Navier Stokes system on a grazing corner in a polygonal domain. The density has a jump discontinuity across a curve inside the domain of the problem. Derivatives of the velocity have also jump discontinuities. The solution comes from a well-posed boundary value problem on a polygonal domain.

A formula for the decay of the jump is given. The decay formula suggests that density jumps may be noticeable in a high speed flow occurring in a very viscous, very compressible fluid.

This is a joint work with Prof. B. Kellogg.

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