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Gui-Qiang Chen and **Mikhail Feldman*** (feldman@math.wisc.edu). *Shock reflection for potential flow.*

In this talk we discuss existence and regularity of global solutions to shock reflection for potential flow. Self-similar potential flow equation is a nonlinear equation of mixed elliptic-hyperbolic type. One of main issues in analysis of shock reflection is to study solution near sonic line, where the type of equation changes. (Received August 28, 2009)