

# Shock Reflection-Diffraction, Transonic Flow, and Free Boundary Problems (I)

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Abstract:

In this talk we will start with various shock reflection-diffraction phenomena and their fundamental scientific issues. Then we will describe how the shock reflection-diffraction problems can be formulated into free boundary problems for nonlinear partial differential equations of mixed-composite hyperbolic-elliptic type. Finally we will discuss some recent developments in attacking the shock reflection-diffraction problems, including our results on shock reflection with Mikhail Feldman.