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Shidong Jiang* (shidong.jiang@njit.edu), Department of Mathematical Sciences, New Jersey Institute of Technology, University Heights, Newark, NJ 07102. *Scattering by Open Surfaces.*

In this talk, we consider stable second kind integral equation formulations for the scattering problems involving open surfaces in both acoustic (Helmholtz equation) and electromagnetic (Laplace equation and Maxwell's equations) environments. A complete two dimensional theory will be presented for boundary value problems for the Laplace and Helmholtz equations, with the boundary data specified on a collection of open curves. Some preliminary results on three dimensional problems will also be discussed. The performance of the obtained apparatus is illustrated with several numerical examples. (Received September 14, 2006)