1010-35-9   **Yongzhi S Xu*** (`ysxu0001@louisville.edu`), Department of Mathematics, University of Louisville, Louisville, KY 40292. *Scattered waves through a waveguide from a half-opened space.* Preliminary report.

In this talk we discuss scattered waves propagating through a waveguide from a half-opened space. A scatterer is located in a half-opened space. Incident waves are sent in through a waveguide and scattered by the scatterer. Then they propagate back through the waveguide. We will discuss related direct and inverse problems and applications. (Received July 11, 2005)