1120-35-243 **Robert Booth*** (rjbooth@live.unc.edu), University of North Carolina at Chapel Hill, Department of Mathematics, Office 416, Phillips Hall CB #3250, Chapel Hill, NC 27514. *Localized energy for wave equations with degenerate trapping.* Preliminary report.

It is well known that locally in space and average in time, solutions to the Schrödinger equation gain one half of derivative of regularity compared to the initial data. This is referred to as a local smoothing estimate. Analogous estimates exist for solutions to the wave equation - except instead of local smoothing, we attain a global integrability estimate (in time and space). When considering the analogues of these estimates for equations on differentiable manifolds, it is known that geodesic trapping necessitates a loss. For non-degenerate hyperbolic trapping, the loss is logarithmic. For elliptic trapping, everything is lost except a logarithm. Recently, Christianson and Wunsch demonstrated an algebraic loss for solutions to the Schrödinger equation on a surface of revolution with degenerate hyperbolic trapping. In this talk, we will review these prior results and consider the analogue for the wave equation on a surface of revolution with degenerate hyperbolic trapping, attaining an algebraic loss. We will use a quasimode construction to show that our estimate is sharp. This is joint work with Hans Christianson, Jason Metcalfe, and Jacob Perry. (Received February 23, 2016)