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Jeremy Marzuola and **Jason Metcalfe*** (metcalfe@email.unc.edu), Department of Mathematics, University of North Carolina, Chapel Hill, NC 27599-3250, and **Daniel Tataru** and **Mihai Tohaneanu**. *Dispersion for the wave equation on Schwarzschild backgrounds.*

In this talk, we discuss two of the more robust ways of measuring dispersion for the wave equation: localized energy estimates and Strichartz estimates. We shall look at such estimates for the wave equation on Schwarzschild space-times. There are three main estimates that we prove. First, we prove a localized energy estimate using a positive commutator argument. The novelty of this is that we do not require a different choice of multiplier on each harmonic and we are able to attain an estimate that is smooth across the event horizon. Secondly, we use a rough WKB analysis to improve this estimate near the photon sphere, and in particular prove that only logarithmic losses are necessitated. Finally, we combine this improved localized energy estimates with a global parametrix construction of the second and third authors for small perturbations of the d'Alembertian to prove lossless Strichartz estimates for all non-sharp exponents. (Received September 01, 2009)