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Robert Booth* (rjbooth@live.unc.edu), University of North Carolina at Chapel Hill, Department of Mathematics, CB 3250, 329 Phillips Hall, Chapel Hill, NC 27599, and **Hans Christianson, Jason Metcalfe** and **Jacob Perry**. *Local energy decay for wave equations with degenerate trapping.*

Local energy estimates are a fundamental bound in the study of dispersive PDE. For wave equations in the presence of background geometry, it is known that geodesic trapping necessitates a loss in regularity compared to the usual Minkowski space-time estimate. For non-degenerate hyperbolic trapping (such as the photon sphere in Schwarzschild space-time), the loss is logarithmic; while all is lost except a logarithm for elliptic trapped sets. We consider the wave equation on a manifold with degenerate hyperbolic trapping and attain a local energy estimate with sharp polynomial loss. To our knowledge, this is the first such example for the wave equation and is motivated by the work of Christianson-Wunsch for the Schrödinger equation. Proof techniques include a WKB inspired analysis and a quasimode construction. This is joint work with Hans Christianson, Jason Metcalfe, and Jacob Perry and related to a separate talk given by Jacob Perry. (Received September 25, 2017)