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John A Helms* (johnhelms@math.ucsb.edu), Department of Mathematics, South Hall, Room 6607, University of California, Santa Barbara, CA 93106-3080, and **Jason L Metcalfe**. *The Lifespan of Solutions to the Wave Equation in Exterior Domains*.

In this talk, we will discuss lifespans of solutions to quasilinear wave equations of the form $(\partial_t^2 - \Delta)u = Q(u, u', u'')$ whose domain is $[0, T] \times \mathbb{R}^3 \setminus \mathcal{K}$, where \mathcal{K} is a smooth, bounded domain. Previous results have shown that longtime existence of solutions follows when \mathcal{K} is star-shaped. We will see that this result extends to more general geometries. In particular, we only assume that the local energy near \mathcal{K} decays sufficiently rapidly for specific solutions to the linear wave equation. This is joint work with Professor Jason Metcalfe, UNC-Chapel Hill. (Received September 20, 2012)