1116-42-132 **Christopher Sogge**, **Xing Wang** and **Jiuyi Zhu*** (jzhu43@math.jhu.edu). *Doubling estimates, vanishing order and nodal sets of Steklov eigenfunctions.* Preliminary report.

Recently the study of Steklov eigenfunctions has been attracting much attention. We investigate the qualitative and quantitative properties of Steklov eigenfunctions. We obtain the sharp doubling estimates for Steklov eigenfunctions on the boundary and interior of the manifold using Carleman inequality. As an application, optimal vanishing order is derived, which describes quantitative behavior of strong unique continuation property. We can ask Yau's type conjecture for the Hausdorff measure of nodal sets of Steklov eigenfunctions. We derive the lower bounds for interior and boundary nodal sets. In two dimensions, we are able to obtain the upper bounds for singular sets and nodal sets. Part of work is joint with Chris Sogge and X. Wang (Received August 10, 2015)