1126-58-152 **Anna Sakovich*** (anna.sakovich@math.uu.se). *The Jang equation and the positive mass theorem in the asymptotically hyperbolic setting.* Preliminary report.

A complete Riemannian manifold is called asymptotically hyperbolic if its ends are locally modeled on neighborhoods of infinity in hyperbolic space. This can be naturally interpreted through the notion of conformal compactification as introduced in general relativity in the early 1960s by Penrose. Since then, conformally compact manifolds have played an important role in conformal geometry, relativity, string theory through the AdS/CFT correspondence, and scattering theory. An important question is the problem of scalar curvature rigidity, which is closely related to positive mass theorems in this setting. The notion of mass here is rather delicate: unlike in the asymptotically Euclidean case, it is not natural to isolate a 'scalar' mass, but rather there is a family of mass-like invariants. For the Wang mass, defined by integrating a mass aspect density, there is a positive mass theorem on spin manifolds. In the general case, Andersson, Cai, and Galloway used an innovative technique based on the Witten-Yau BPS brane action to prove that this mass aspect cannot be everywhere negative. In this talk, we will discuss the proof of the fact that the mass itself is non-negative, which relies on the original ideas of Schoen and Yau and involves a blow-up analysis of the Jang equation. (Received January 10, 2017)