1172-53-105   **Hyun Chul Jang***, h.c.jang@math.miami.edu, and **Pengzi Miao**. *Hyperbolic mass via horospheres.*

Asymptotically hyperbolic (AH) manifolds arise naturally in general relativity as a spacelike hypersurface in an asymptotically Minkowski spacetime or an asymptotically AdS spacetime. The mass of AH manifolds is a geometric invariant that measures its deviation from hyperbolic space. In this talk, we present a mass formula using large coordinate horospheres. The formula is stated as a limit of the (weighted) difference of total mean curvatures on large coordinate horospheres. We remark a few geometric implications of the formula including scalar curvature rigidity of AH manifolds. This talk is based on joint work with P. Miao. (Received August 20, 2021)