Research Assignment 1

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Chosen Topic

Topic 4 - MW/M31 Dark Matter Halo Merger Remnant

- Kinematic Properties of the Merged Dark Matter Halos: is there any rotation/what is the evolution of the angular momentum? What is the velocity dispersion profile of the remnant and how does this compare to the original profile of each galaxy?
- Density Profile of the Merged Dark Matter Remnant. What is the density profile of the combined MW + M31 halo? How does this compare to the original profile of each galaxy halo? How does this compare to a Hernquist profile or other dark matter profile (e.g. NFW, Isothermal Sphere)?
- What is the Shape of the Dark Matter Distribution of the remnant? Is it Triaxial? Oblate? Prolate?
- What is the contribution of the MW vs. M31 halo particles to the density profile/shape/or kinematics of the merged remnant? Does the contribution from each galaxy have the same spatial orientation/angular momentum direction?