Contribution ID: **91** Type: **Poster**

Studying Jeans Equations in the Milky Way disk

Wednesday, 17 May 2023 13:15 (1 minute)

Determining the circular velocity curve of a galaxy is a powerful tool for studying its overall shape. One can fit a potential and determine the dark matter distribution and density, or even the virial mass of the system. One way of determining the rotation curve is through Jeans equations (Eilers et al. 2019, Ou et al. 2023). However, when using Jeans equations one needs to assume axisymmetry and time-independence. In this talk, I will show how the components in Jeans equations behave in different regions in the Milky Way disk, determined with *Gaia DR3* data. I will talk about how well the aforementioned assumptions hold up, and show what the uncertainty in our conclusions can be if they don't.
I will also show how an interaction with a Sagittarius-like perturber can change this analysis using an N-body simulation.

Primary author: KOOP, Orlin (Kapteyn Astronomical Institute, Rijksuniversiteit Groningen)

Co-authors: Prof. HELMI, Amina (Kapteyn Astronomical Institute, Rijksuniversiteit Groningen); Dr ANTOJA, Teresa (ICCUB, University of Barcelona)

Presenter: KOOP, Orlin (Kapteyn Astronomical Institute, Rijksuniversiteit Groningen)

Session Classification: Poster Prizes & closing