
Revisiting the structure and kinematics of the Taurus star-forming region with Gaia-DR2 and VLBI data

Phillip Galli*¹

¹Laboratoire d'Astrophysique de Bordeaux (LAB) – Université de Bordeaux (Bordeaux, France) – France

Abstract

The Taurus star-forming region hosts hundreds of young stellar objects that are spread over multiple filaments and clumps. We take advantage of the second data release of the Gaia space mission and the state-of-the-art astrometry delivered from Very Long Baseline Interferometry (VLBI) observations to revisit the structure and kinematics of the Taurus region. We apply a hierarchical clustering algorithm for partitioning the stars in our sample into groups (i.e., clusters) that are associated with the various molecular clouds of the complex, and derive the distance and spatial velocity of individual stars and their corresponding molecular clouds. In this talk I will present new results on the structure, kinematics (internal motions, expansion and rotation) and connection between the stellar and gas dynamics in the context of the local history of star formation.

Keywords: Taurus, star formation, distance, kinematics, Gaia, VLBI

*Speaker