



Quinto workshop sull'astronomia millimetrica in Italia

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## **Elena Redaelli - The core population and kinematics of a massive clump: an ALMA view of AG14.49**

*Monday, 12 June 2023 15:31 (1 minute)*

High-mass stars dominate the kinematics and energetics of the interstellar medium, and yet their initial stages are poorly known. In fact, high-mass stars are born in crowded, dense, and distant environments (infrared dark clouds) that pose significant observational challenges. In this work, we use a combination of several ALMA datasets to investigate the properties of the high-mass clump AG14.49, focusing on two aspects: the prestellar core population embedded in it and the clump-scale kinematics. By applying a dendrogram analysis to ALMA Band 7 data of  $\text{oH2D}^+$ , we find 22 cores that are essentially low-mass and subvirial. Using Band 3 data of  $\text{N2H}^+$  (1-0) combined with a friend-of-friends algorithm to perform hierarchical clustering, we are able to dissect the complex 3D structure of this massive clump and to link kinematically the cores to their parental gas.

**Session Classification:** Posters: 1-minute talks