

The core mass function in star-forming region NGC6357

J. Brand^{1,2}, A. Giannetti^{1,2}, C. Verdirame^{1,3}, J.G.A. Wouterloot⁴, F. Massi⁵

¹. INAF – Istituto di Radioastronomia, Bologna, Italy

². Italian ALMA Regional Centre, Bologna, Italy

³. Università di Bologna, Bologna, Italy

⁴. Joint Astronomy Centre, Hilo, Hawaii, USA

⁵. INAF – Osservatorio Astrofisico di Arcetri, Florence, Italy

E-mail: brand@ira.inaf.it

The distribution over mass of stars at birth (the IMF) is one of the most important parameters in star-formation research. What determines the IMF is still not clear, nor is it clear whether the IMF is the same for every star-forming region. It does seem, however, that the IMF is set very early on by the mass of the molecular cores out of which the stars form. The core mass function (CMF), and by consequence the IMF, may however depend on the physical and chemical properties of the environment.

In this poster we present the results of our determination of the CMF at various locations in the Galactic star-forming complex NGC 6357. We used SCUBA2 at the JCMT to observe the dust associated with the molecular clouds in a $30' \times 30'$ region containing two HII regions. We assess the radiative and mechanical influence of the stars that excite the HII regions on the molecular gas, by determining the CMF near the HII regions and comparing it with that in more quiescent (less exposed to intense stellar feedback) parts of the complex. Preliminary analysis suggests there is a difference between the CMFs.

Different CMFs may significantly affect the mass distribution of the final stellar population, and we compare IMFs model-generated from these CMFs. The actual IMFs in these regions will be determined separately (see talk by Massi et al.).