current theme in the presentations of this session has been the importance of star-formation efficiency to cluster formation. However, this then begs the question of what primarily determines the star-formation efficiency. On the macroscopic scale, perhaps the most plausible answer is pressure, but it is not yet clear what subtleties, which may have a secondary role, are hiding in the microphysics; we must keep in mind that star formation is a local process. Although it is currently the fashion to accumulate large data sets with impressive statistics, in-depth case studies are still critical if we wish to disentangle all of the ingredients affecting massive star and star-cluster formation.

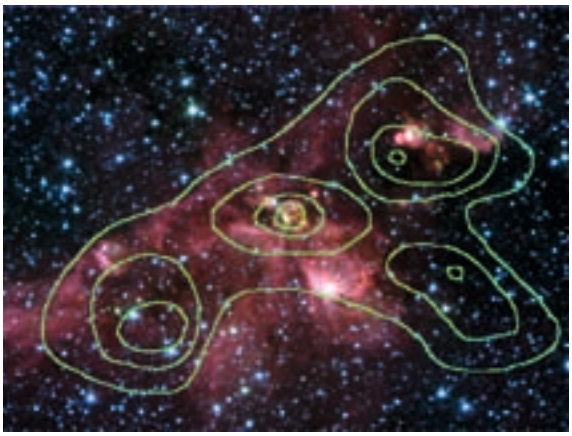

Figure 3: A massive star-forming region, presented by Eric Keto, illustrating massive accretion flows. The figure shows an overlay of contours of emission from molecular gas on a background image of mid-IR emission from Spitzer Space Telescope data. The central cloud encloses a particularly massive flow of 10^3 $M_\odot$/yr into the centre of the star cluster seen in the IR. The innermost contour is about 30″ in diameter (0.9 pc at 6 kpc).

"Which physics determine the stellar upper mass limit?"

Finally, Hans Zinnecker, Eric Keto, Carsten Weidner and Hugues Sana set out to answer this question. The most massive stars in the Galaxy are typically found in a group of several similar stars at the centre of an OB cluster, for example, the Orion Trapezium. When we look at a very young, embedded OB associations still in formation, such as G10.6-0.4, we see a massive molecular accretion flow into the centre of the cluster. Thus we expect the most massive stars in the Galaxy to form at the centres of such cluster-scale accretion flows (see Figure 3). The accretion velocities indicate that the flow is a 'cooperative accretion flow' drawn by the cooperative gravitational pull of the combined mass of several O stars at the cluster centre. Within a few thousand AU of the O stars, the molecular accretion flow becomes ionised, but continues in toward the cluster centre because the escape velocity from the co-op of the stars exceeds the ionised sound speed. The ionised accretion flow spins up into an ionised accretion disc at the cluster centre. Because the dust that was originally in the molecular accretion flow is destroyed by the high temperatures and densities in the disc, accretion can continue onto the individual stars in the co-op, unimpeded by the intense radiation pressure on dust. Secondly, in the fully ionised flow there is no outward pressure between the hot ionised and cold molecular gas to impede the flow. Thus the cluster-scale cooperative accretion flow sets up these two conditions that allow accretion onto very massive O stars despite the presence of outward forces of radiation and thermal pressure. The observational evidence, and more of the physics of the upper stellar mass limit, are reviewed in the recent Annual Reviews of Astronomy and Astrophysics article by Zinnecker and Yorke.

Overall, the workshop certainly left us with more questions than answers, but the format was a success as the workshop was dominated by long and fruitful discussions. The two communities working on star formation and star-cluster formation moved a step closer towards each other and there is good hope that they will merge in the epoch of ALMA.

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Announcement of a Workshop on

Science from UKIDSS

17–19 December 2007, ESO Headquarters, Garching, Germany

The workshop will take place a few weeks after the UKIRT Infrared Deep Sky Survey (UKIDSS) large Third Data Release (DR3). The purpose of the workshop is to provide a forum, bringing together European astronomers working on (or planning to work on) UKIDSS data, to hear about science being undertaken with UKIDSS, and to share knowledge gained in working with the data and ideas for exploiting the archive efficiently, in an informal atmosphere. The emphasis will be on work in progress. The workshop will include science and technical talks, and tutorials, as well as a summary of the current status of the surveys, and an opportunity to discuss the future direction.

Registration will be open from 15 September 2007 at *http://www.ukidss.org/esoworkshop.*