

*Workshop*

## **Imaging of Stellar Surfaces**

*ESO Garching, March 5-9, 2018*

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**Title:**

Mass loss from stars: prospects with ALMA and other radio interferometers

**Abstract:**

We can now fully resolve a small sample of stars, in general spotty and/or aspherical, with radii larger (as a function of observing wavelength) than the optical or NIR photosphere  $R^*$ , requiring the full capabilities of ALMA, e-MERLIN, the NG-VLA or SKA with long baselines. ALMA results has confirmed the presence of continuum hot-spots as well as molecular absorption, against surprisingly large stellar diameters. These studies can be used to investigate the transport of mass and energy through the layers above the photosphere, timescales depending on whether radiative, ionisation/recombination effects, or bulk transport dominate. Maser properties can be measured with an order of magnitude higher resolution than thermal lines. The clumpiness of the wind could be related to local ejection of mass from the stellar surface. Models now provide the tools to reconstruct physical conditions from multiple maser lines, and could reveal changes associated with the formation of dust and the transition from complicated infall and outflow near the star, to the radially accelerating wind. I will concentrate on practical aspects of current and potential high-resolution observations to these ends.