

# Colloquium

SFB 956

Conditions and Impact of Star Formation

02.06.2014

Monday 4:00 pm

Physikalische Institute Köln

Lecture Hall III

Zülpicher Straße 77 | 50937 Köln

**Riccardo Cesaroni**

INAF - Osservatorio Astrofisico di Arcetri, Firenze, Italy

## The Birth of Early-type Stars: Recent Results and Expectations

Despite the dramatic progress in the last two decades, much remains to be understood on the process of star formation, especially for the most massive (early B-type and O-type) stars. While solar-type stars are known to be forming through disk-mediated accretion, the same scenario cannot be trivially applied to stars in excess of  $\sim 6 M_{\text{sun}}$ . Substantial observational and theoretical efforts have been devoted to shed light on the mechanism of high-mass star formation, and we are now in the condition to draw some (partial) conclusion. In this talk I will illustrate the basic differences between low- and high-mass star formation and I will then focus on two major issues: the definition of an observational criterion to identify the evolutionary stage of a massive (proto)star; and the role played by circumstellar disks in the accretion process onto the (proto)star. With this in mind, I will present the most recent results obtained by us with various instruments, including the Atacama Large Millimeter Array (ALMA). Finally, I will show how in the near future ALMA observations will determine a breakthrough in the search for disks around stars in excess of  $20 M_{\text{sun}}$ .

