Colloquium

SFB 956

Conditions and Impact of Star Formation

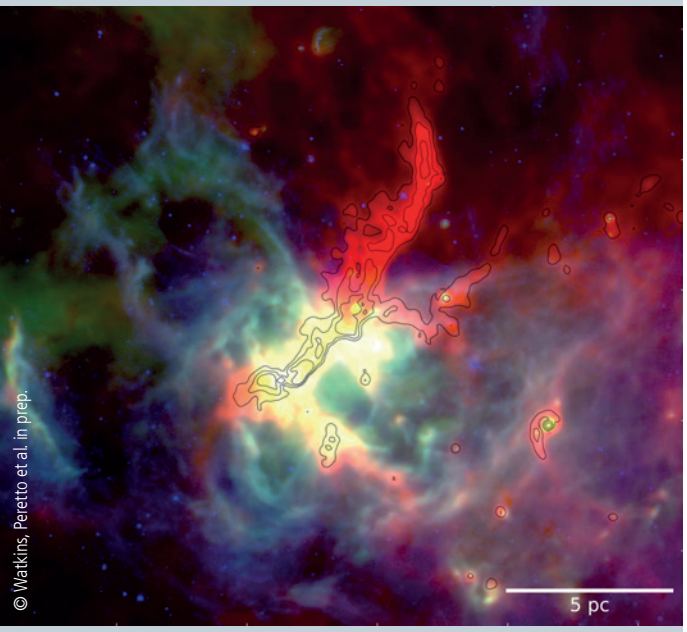
28 January 2019 | supplementary colloquium

Monday 3:00 pm

Physikalische Institute Köln

Lecture Hall III

Zülpicher Straße 77 | 50937 Köln



Red is Herschel 250micron, Green is Herschel 70micron, Blue is Spitzer 8 micron.

Nicolas Peretto

Cardiff University, UK

On the Formation of OB Stars: Clouds, Filaments, Cores, and the Role of Stellar Feedback

The initial conditions of star formation are imprinted within the properties of the many interstellar gaseous structures that are involved in the process. Understanding what physical mechanisms drive star formation therefore requires a detailed understanding on what regulates the dynamical evolution of the interstellar gas, from large diffuse clouds to these compact balls of nuclear burning gas. Mostly driven by the powerful combination of recent sensitive sub-millimeter large-scale surveys of star-forming clouds and high-angular resolution follow-up observations of selected sources, significant progress has been made in our understanding of star formation in the past decade. However, despite such progress, fundamental questions regarding, for instance, the pace at which gas flows from large to small scales and the origin of the low star formation efficiency within molecular clouds, still remain highly debated. In this context, I will present recent results on the properties of massive-star-forming molecular clouds from tens of parsec scales down to a few thousand AU scales. More specifically, I will be focusing on three key aspects: the evolution of cloud virial ratios as a function of cloud sizes; gravitational collapse and the role of hub filamentary systems in the formation of massive cores; and the impact of feedback from OB stars on the gas properties of the parent clouds.