

Colloquium

SFB 956

Conditions and Impact of Star Formation

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Physikalische Institute Köln

Video stream / Host: Peter Schilke

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Our Galaxy's Center: a Window into the High-Redshift Universe

Galaxy centers are the hubs of activity that drives galaxy evolution, from supermassive black holes to dense stellar clusters and feedback from newly-formed stars. Our own galaxy's center has properties (densities, temperatures, and turbulent line widths) that are reminiscent of galaxies at the peak of cosmic star formation, but in our own cosmic backyard, where the interplay of these physical processes can be resolved in detail. In this talk, I will discuss gas inflow into our Galaxy's Center, properties of the gas, and incipient star formation. I will discuss simulations of gas flows into the Galactic Center, which are thought to contribute to the unusual properties of star formation in this region, namely that it is producing 10x fewer stars than predicted by standard scaling relations. I will describe observations of the gas and incipient star formation in this region, as well as discuss efforts to measure whether or not this unusual environment results in a change to the Initial Mass Function.

Image: A three-color view of clouds in our Galaxy's Center. Red shows new submillimeter observations, peering deep inside these dense clouds and pinpointing incipient star formation in the region (CMZoom: Battersby et al. 2020), Green is Herschel 70 micron (Molinari et al. 2010), and Blue is Spitzer 8 micron (Benjamin et al. 2003).