Conference: 15693-12 From Atoms to Pebbles: Herschel's View of Star and Planet Formation Symposium

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Title: "A Unique Gas-Rich Debris Disk: Herschel Imaging and Spectroscopy of 49 Ceti"

Presenter: Aki Roberge

Abstract:

Gas-poor debris disks represent a fundamentally di_erent class of circumstellar disk than gas-rich protoplanetary disks. Their gas probably originates from the same source as the dust, i.e. planetesimal destruction, but the low gas densities make it di_cult to detect. So far, Herschel has detected far-IR gas emission from only one or two debris disks, Beta Pictoris being one of them. Here we present Herschel GASPS observations of a well-known debris disk system, 49 Ceti. The dust disk is spatially resolved in thermal emission at 70 _m. Most interestingly, weak far-IR gas emission is detected. Preliminary modeling suggests that reconciling the sub-mm CO emission seen from this system with the far-IR gas detection and upper limits requires a low gas-to-dust ratio and possibly an unusual gas composition.