

Collisional and Thermal Modelling of Debris Disks in the Herschel/DUNES Programme

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Abstract

The observational data obtained in the Herschel Open-Time Key Programme DUNES form a solid basis for in-depth modelling of the underlying dust. Spectrophotometry combined with resolved images can put strong constraints on the size and radial distribution. Our suite of modelling tools comprises implementations of two different fitting algorithms for the dust's thermal emission (GRaTer for Bayesian χ^2 mapping, SAnD for thermal annealing) and a code to statistically follow the collisional evolution of a full disk that includes everything from dust to planetesimal (ACE). Thus we can address both which dust is present and how it is produced and removed. Here, we will present exemplary results that show the potential and the limitations for interpreting the disks around α^1 Eri and HD 207129. An interesting trend is that of grains being larger in disks that are farther from their host stars.