

Polycyclic Aromatic Hydrocarbon (PAH) radial transfer in planet forming disks

Wednesday, 17 May 2023 13:15 (1 minute)

Polycyclic aromatic hydrocarbons (PAHs) are very stable molecules made of aromatic carbon rings. Their prominent infrared features were found in interstellar space, in asteroids, and are one form of carbon in circumstellar disks. Even though they are not the dominant form of carbon, these molecules can be easily observed making them an object of active research interest. Professor Carsten Dominik and his PhD candidate, Kevin Lange, are currently working on investigating how PAHs interact with dust grains, such as freeze-out, desorption from grains under UV radiation, and migration onto grains to the inner parts of the disks. In this project, I am building up on this work to model the radial transport of PAHs in planet forming disks using the 1D disk evolution code, DISKLAB.

With this, we aim at investigating local changes of the PAH abundance throughout the disk which will become relevant with the first observations from the James Webb Space Telescope.

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Session Classification: Poster Prizes & closing