MERAC Prize in New Technologies (Computational) - What do we know about disks around planets? (No 92)

01.07.2021 14:30 - 15:00 Prize winner
Thursday Plenary

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We still have a lot to understand about how the Solar System came to be, how planets and their moons generally form in the Universe. We know planets form in gas-dust disks around nascent stars, and similarly, moon-systems of the giant planets assemble in disks around the forming gas giant planets.
I am using hydrodynamic simulations with radiation transport to study the details of the planet- and moon-formation processes in disks: what are the timescales that these objects form? How gas giants acquire their gaseous envelope? How do we end up with such a diverse population of planets and moons that were so far discovered? Computer simulations can answer some of the blind spots in our understanding of planet formation.