## Detection and Dynamics of Exoplanets (DDE): Interplay between theory and observations



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## How Different Initial Conditions Can Affect the Configuration of Planetary Systems

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My PhD research investigates the study of young planets from both observational and theoretical perspectives. These planets are undergoing various dynamic evolutionary processes, such as orbital migration, thermal contraction, and atmospheric loss, which provide valuable insights into the formation and early evolution of planetary systems. From the observational aspect, my research focuses on the detection and characterization of young exoplanets. While on the theoretical side, I am conducting simulations based on current models of planetary system formation and evolution to perform a statistical analysis of how different initial conditions influence the final configuration of planetary systems. Specifically, my research considers a model that incorporates pebble and planetesimal accretion, orbital migration, and photoevaporation within a gaseous and dusty disk. By examining factors such as the initial position of the planets, the dust surface density of the disk, and the speed of planetary migration, my study aims to identify how these key parameters affect the final architecture of planetary systems. I will present the first results from my analysis with some possible interpretations.

**Presenter:** CACCHERANO, Beatrice (Queen Mary University of London) Session Classification: Poster Session