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Results from the HARPS-N Survey of Kepler, K2, and TESS small-planet systems (invited talk)

Thursday 26 March 2026 11:05 (25 minutes)

Unveiling the architecture of planetary systems is crucial for understanding how planets form and migrate. In this talk, I investigate the occurrence rate of Cold Jupiters (CJs) in systems that host inner Small Planets (SPs), aimed at understanding if giant planets shield or disrupt their smaller inner siblings. I will present results based on an extensive dataset of over 5000 radial velocities gathered by the HARPS-N Collaboration, following up on Kepler, K2, and TESS candidates. By expanding the sample size and refining detection bias corrections, we offer new insights into the correlation between outer giants and inner super-Earths/sub-Neptunes. I will detail specific test cases, including the confirmation of CJs in systems like K2-312, and critically discuss false positives where long-period trends are actually driven by stellar activity. Finally, I will explore how these SP–CJ architectures correlate with stellar metallicity and mass, providing critical observational constraints for evolutionary models.

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Session Classification: Cold Jupiters AND inner low-mass planets (individual systems and statistical analyses) - inside-out