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



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Beyond the mass-radius diagram: Capitalizing on synergies between planet formation theory and observations to probe the nature of small exoplanets

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Despite the discovery of thousands of close-in sub-Neptune exoplanets in our galaxy to date, their exact nature continues to be a point of debate. The uncertainty in their compositions generally results from the inherent degeneracies in their mass-radius diagram. Recent work demonstrating that significant amounts of water can be produced endogenically by hydrogen magma-ocean interactions exasperates this further, as the mere detection of atmospheric water features can hence no longer be treated a robust diagnostic for formation beyond the ice line. In my talk I will highlight how, by capitalizing on synergies between planet formation theory and observations, some of these degeneracies can be broken. I will conclude by charting a way forward to unveil the true nature of sub-Neptune exoplanets.

Presenter: SCHLICHTING, Hilke (University of California, Los Angeles) **Session Classification:** Formation and evolution of planetary systems