



Effects of Lower Boundary on Hot-Neptune and Super-Earth Atmospheres

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A significant number of hot-Neptunes and super-Earths have now been detected. As for the extrasolar Jupiter-like planets, atmospheric dynamics and temperature distribution is crucial for characterizing the new planets. Dynamically, these planets possess atmospheres that are similar to their Jupiter counterparts. However, one important difference is the presence of a liquid (ocean) or solid (land) lower boundary. In this presentation, we present analysis of the equations that govern the dynamics of lower atmospheres on hot-Neptunes and super-Earths. We also present results from three-dimensional, global, hydrodynamic simulations of these planets, laying stress on the differences from the analogous Jupiter simulations.