Characterizing exoplanets and brown dwarfs

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In the 25 years since the discovery of the first exoplanet and brown dwarf,our atmospheric models have developed considerably. We are in the era wheredevelopments in atmospheric models are data driven. In this talk, I will discusshow high signal-to-noise-ratio observations of brown dwarfs have informed ourmodels in the last decade and why these model updates are crucial for ourunderstanding of imaged atmospheres. I will discuss how the knowledge we get frombrown dwarfs today, can be used in the coming era when JWST and the largeground-based telescopes will get comparable quality data for imaged exoplanets towhat we already get for brown dwarfs. Finally, I will discuss how high-resolutionobservations will help us constrain the 3D structure of brown dwarf andexoplanet atmospheres.