

# The formation and long-term evolution of circumbinary planetary systems across the H-R diagram

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## Planet-disk interaction in circumbinary disks

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“As of today we have about a dozen confirmed planets that orbit both binary stars. These planets must have formed and evolved in the protoplanetary, circumbinary disc. To gain a full understanding of the observed planet we need to trace them backwards in time and investigate the planet migration within the disc and how the binary potential can dictate the final orbit of the planets and how the planets can reshape the structure of the disc beyond their location.

This work has started more than a decade ago with the discovery of Kepler-16b. The complex interaction between viscous flow, and wave propagation and gravitational interaction of the binary, planet and disc leaves us till today with some mysteries and a highly sensitive test case to see if we understand planet formation yet. In this talk, I will discuss the past decade of hydrodynamic simulations and the progress we have made to explain the population of known circumbinary planets through numeric models.

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**Session Classification:** CB disc properties and planet formation