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Circumstellar discs around evolved post-AGB binary systems: a site for planet formation?

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Circumstellar discs are found at different evolutionary stages of stars. In this talk, I will focus on a class of evolved stellar systems that show stable circumbinary discs of gas and dust, namely post-asymptotic giant branch (post-AGB) binary systems. These circumbinary discs show remarkable, but unexpected, similarities with planet forming discs around young stellar objects. Using infrared interferometry to spatially resolve the emission from the very inner regions of these discs, we gain insight into both the dynamical disc-binary interaction and the physical conditions in the inner disc regions. In this talk, I will present the results of our thorough observing campaign using all the current VLTI instruments, PIONIER, GRAVITY, and MATISSE, to reveal the circumbinary disc around one such post-AGB binary system. I will show model results that reproduce the visibility data of all bands, providing strong implications on the inner disc properties and disc-binary interactions. I will discuss the importance of interferometric observations to further constrain the structure and evolution of these circumbinary discs and how we can get constraints on the possibility of second generation planet formation.

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