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Sesión Científica: La via lactea y sus componentes

Título: Detection and study of circumstellar envelopes in extremely young planetary nebulae

Nombre (Autor que presenta): J. Ricardo

Apellidos (Autor que presenta): Rizzo Caminos

Apellidos y nombre de los autores: J. R. Rizzo, L. Uscanga, J. F. Gómez, L. F. Miranda

Resumen:

Maser emission lines in intermediate-mass evolved objects are one of the best signposts of the energetic events which drive the evolution of the planetary nebulae. One of the most challenging aspects is the physical relationship between the occurrence of water and OH masers, the precise evolutive stage of the stars, and their mass progenitors. We have used the 30m radio telescope at Pico Veleta to observe the CO and ^{13}CO line emission at 3 and 1 mm in a selected sample of five extremely young planetary nebulae, which display OH and/or water maser emission. The aim is to detect and characterize the cold envelopes associated to the planetary nebulae and look for some link between the progenitor stars and their corresponding maser emission. We detected the four lines observed in a total of three sources, and derived the most relevant physical parameters, such as sizes, densities, kinetic temperatures, opacities and masses.