P108b A Comprehensive Study of High-Mass Star-Forming Regions

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We aim to understand how hot molecular cores fragment to form single or binary high-mass stellar systems. For this purpose, we will combine high-angular resolution observations at 100-200 AU scales (at ∼230 GHz) with polarization observations at 500-1000 AU scales (250 GHz) to determine the relative balance between turbulence, gravity, and magnetic fields and to assess what control the different formation scenarios. We expect to reveal at which scales high-mass binaries form (core or disk fragmentation) and if magnetic field play any role in the process. For this, we have been awarded over 30 hrs of ALMA time to observe 31 high-mass star forming regions containing ∼50 massive young stellar objects. Here me present some early results of the recently delivered data sets.