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ALMA's View of Dust in SN 1987A

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SN 1987A, being relatively young as well as the brightest supernova observed in over 400 years, is a unique and exciting laboratory for studying supernova dust production. Located around 50kpc away in the Large Magellanic Cloud, SN 1987A is too far away for single-dish telescopes to resolve the structure of the sub-mm emission on the scale of the ejecta, where the dust is produced. Recent ALMA observations have allowed us to peer into the inner ejecta to the cool dust, with resolution probing down to physical scales of 4500 AU. Comparison of the dust location and morphology with other multi-wavelength emission presents an interesting picture of the role dust plays in the ejecta. The distributions of the dust continuum and molecular line emission are all notably complex, having implications for the physical properties of the system.

Consider for a poster?

Yes

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