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Presentation Requested: oral
Category: Evolution of the Interstellar Medium and Star formation over Cosmic Time
Question: Other

Arp 220 - A Nearby Template for High Redshift Applications

Using new Jansky VLA capabilities we observe Arp 220, the nearest ULIRG. With a high star formation rate similar to high-z galaxies, but at a close distance from the Milky Way, Arp 220 allows us to explore these extreme conditions on comparably small scales. With the availability of high-frequency (K, Ka, and Q band) receivers with wide bandwidths, we detect multiple predicted line species as well as several others, some of which have yet to be identified. With these observations we map the temperature, density, and shocked regions within the Arp 220 system. Complex structure that differs between lines is seen, indicating that conditions and composition vary greatly throughout Arp 220, especially when offset from the two bright nuclei. The strength and isolation of some lines allows us to accurately assess the kinematics of the absorption and emission regions. Additionally, we use continuum data to gauge star formation on both global and local scales and to improve our understanding of the spectral energy distribution.