

Contribution ID: 138

Type: Oral

## CO Polarization from GK Effect: 3D Magnetic Field in Orion KL

Magnetic field plays a crucial role in the evolution of the ISM and star formation process. Traditionally, we study the magnetic field through dust polarization, which is limited to tracing the magnetic field morphology in the plane of the sky. The Goldreich-Kylafis effect (G-K effect) provides a possibility to study the magnetic field through molecular line polarization, probing the magnetic field variation along the velocity axis. Thus, we can use molecular line polarization to map the magnetic field morphology at different depths. This study analyzes the ALMA CO (3-2) and 1.3 mm continuum polarized emission in Orion KL, a region characterized by an unusual explosion of unknown origin. Our findings reveal potential shock fronts along the CO outflow fingers. Interestingly, the CO polarizations. Furthermore, statistical comparisons between CO and dust polarization angles suggest that the two may trace different layers. By combining CO and 1.3 mm continuum polarization of the 3D magnetic field morphology near the explosion center.

## Section

Star Formation

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Session Classification: Plenary session