

P124a **Connecting Sulfur-bearing Species and Dust Polarization of the Protostars in the Perseus Molecular Cloud**

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We present 100 au scale distributions for sulfur-bearing molecules (SO, SO₂, and CS) of six young protostars (Class 0/I) in the Perseus Molecular Cloud. The molecular emission analyses are compared with a recent study of dust polarization within the respective sources. The SO/SO₂ emission show strong correlation with the high and disordered polarization in the extended continuum, indicating intense physical conditions (e.g., high temperature) within these regions. Such comparison studies could provide additional diagnostics of physical properties and activities in the star-forming processes. In the Class I source IRAS03260+3111A, the enriched sulfur species are concentrated and overlap with the “stark contrast” of polarization, revealing a shock induced by infalling materials at the centrifugal barrier (~ 100 au). For the younger Class 0 sources (e.g., NGC1333 IRAS7SM1 and SM2), the magnetically aligned polarization enhancement is well-collimated with the irregular complex molecular filaments in the envelopes and outflow cavities.