

[KIM-15] Spatial Variation of PAH profiles in Planetary Nebula

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We present spatially resolved spectra of planetary nebula BD+30 3639 and NGC 7027. The long-slit spectra were obtained with MICHELLE on GEMINI-North (8m) and the range is in 7.5 – 13.2 μm . The strong 7.7, 8.6 and 11.3 μm band emissions are detected with various atomic lines. The profiles in different nebula can be compared and yield us to investigate band evolution under various physical circumstances. It helps to understand the formation and destruction of the molecular candidates PAHs currently. Preliminary results are shown with relative band ratios and possible sub-features.

[KIM-16] Properties of Interstellar Turbulence Driven by Localized Explosive Sources

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Turbulence in the interstellar medium is observed to be pervasive and highly supersonic, presumably driven by stellar sources or large-scale fluid instabilities. Most of the previous theoretical work on the ISM turbulence applied velocity perturbations of solenoidal type in the Fourier space, examined the properties of such driven turbulence, and compared them with observed quantities. While turbulence driving in the Fourier space is useful to study incompressible turbulence and easy to realize, the real turbulence driving in the ISM is mostly likely to be compressible especially if the stellar sources are major agents. In this talk, we present the results of our three-dimensional simulations in which turbulence is driven by discrete explosive sources in the real space. We compare our results with those from string in the Fourier space in terms of turbulence amplitudes, velocity and density probability density functions, velocity power spectra, and fractal dimensions.