

## **Evolution of Planetary Nebulae and PAH features**

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Near- to mid-infrared spectra of 19 Galactic Planetary Nebulae (PNe), which show prominent C-rich dust features, are obtained with the AKARI/IRC and Spitzer/IRS. Relative intensities of polycyclic aromatic hydrocarbon (PAH) features are investigated. The intensity ratio of the 3.3 to 11.3  $\mu\text{m}$  PAH features in PNe is significantly smaller than predicted by the PAH emission model developed by Schutte et al. (1993), suggesting that small PAHs in PNe are subject to dehydrogenation or destruction. The evolution of the PAH emission is investigated in terms of the evolution of the central stars. As a PN evolves, the effective temperature of the central star increases with a constant luminosity. When the effective temperature becomes high, the ionization fraction of PAHs becomes small, the 3.4—3.5  $\mu\text{m}$  aliphatic features become strong and the peak position of the 6.2  $\mu\text{m}$  feature moves toward shorter wavelength. In the presentation, the origins of these transitions are discussed in terms of the co-evolution of PAHs and a PN.