An AKARI PAHrange Analysis of Probable Electric Dipole Emitting Regions

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Our understanding of dust emission, interaction, and evolution, is evolving. In recent years, electric dipole emission by spinning dust, has been suggested to explain the anomalous microwave excess (AME), appearing between 10 and 90Ghz (Draine & Lazarian, 1998). The observed frequencies suggest that spinning grains should be on the order of 10nm in size, hinting at poly-cyclic aromatic hydrocarbon molecules. We present data from the AKARI/Infrared Camera (IRC, Onaka, et al. 2007), due to its effective PAH/Unidentified Infrared Band (UIR) coverage, and the AKARI/Far Infrared Surveyor(FIS, Doi et al., in prep) to investigate PAHs within a few regions showing strong AME. We use the DustEM code by Compiegne et al. (2011) to predict an SED and compare the AKARI data to that of IRAS and the Planck Observatory. We also describe some variation in the AKARI 9/18um band ratio for AME regions. Part of the AME in these regions may in fact be due to thermal dust emission. In some star-forming regions, the vibrational modes of PAHs may be masked, suggesting further investigation for various galactic environments.