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Probing Origins of Anomalous Microwave Emission with AKARI

Aaron Bell, Takashi Onaka, Itsuki Sakon, Yasuo Doi, Fumihiko Usui, (University of Tokyo),
Daisuke Ishihara, Hidehiro Kaneda (Nagoya University), Martin Giard (IRAP) Ho-Gyu Lee,
Ryou Ohsawa, Tamami Mori-Ito, Markus Hammonds (University of Tokyo)

Many new species of interstellar dust have been modeled and discovered so far. The modes by which these species interact and evolve are beginning to be understood. In recent years a new feature has appeared in microwave surveys. Anomalous microwave emission (AME), appearing between 10 and 90GHz, has been correlated with thermal dust emission, suggesting that AME is electric dipole emission from spinning dust (Draine & Lazarian 1998). Small grains, possibly PAHs, are a leading suspect. We present data from AKARI/Infrared Camera (IRC, Onaka et al. 2007)- due to the effective PAH band coverage of its 9um survey- to investigate their role within a few regions showing strong AME in the Planck and WMAP low frequency data. We include the well-studied Perseus and rho Ophiuchi clouds, as well as a few targets newly identified by the Planck Collaboration (Dickinson et al. 2013). We use the IRAS/IRIS 100um data and the AKARI/FIS FIR data to account for the overall dust temperature in our target regions, and present our results as a ratio of 9um emission to the total far infrared intensity which indicates the PAH abundance.