

A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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**Correlation studies to investigate the
PAH abundance in the Small
Magellanic Cloud**

Saikia Gautam, Indian Institute of Science

The difference in the extinction curve of the Small Magellanic Cloud (SMC) in comparison to that of the Milky Way and the Large Magellanic Cloud (LMC) has been a subject of interest and the source for various silicate-graphite-Polycyclic Aromatic Hydrocarbon (PAH) based dust models, over the years. In this work, we have studied the diffuse dust emission in the SMC using observations made in the far-ultraviolet (FUV: 1000-1750 angstroms) by the Far Ultraviolet Spectroscopic Explorer (FUSE) and the International Ultraviolet Explorer (IUE) telescopes. We have compared the FUV diffuse emission with mid-infrared (MIR) and far-infrared (FIR) observations made by the Spitzer Space Telescope, Wide-field Infrared Survey Explorer (WISE) telescope and the AKARI satellite for the same locations in an attempt to study and explain the particular dust component responsible for the observed emission properties. Since the weakness or absence of the 2175 angstrom feature in the extinction curve is associated with the absence of PAH molecules, we have tried to explain the selective absence of the bump as well as shielding effects in the SMC using our observed multi-wavelength correlation trends.