Infrared Composition of Large Magellanic Cloud

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The infrared (IR) radiation from galaxies is mainly associated with the emission from dust. Usually it is related to the star forming processes in galaxies. However, also stars at the late stages of evolution (mainly AGB and post-AGB stars) contribute to dust supply in galaxies. As we have shown in Pollo et al. 2011 [2], they are not only the majority among the far-infrared point sources in the halo of the Milky Way, but also they dominate its far-infrared flux outside of the Galactic plane. Estimating the actual contribution from early and late phases of stellar evolution to the IR flux and dust supply in different types of galaxies is still an open problem; it has important consequences e.g. for the modeling of spectral energy distributions of different types galaxies.

After analyzing the nature of the far-IR sources of Milky Way outside the Galactic plane (Pollo et al. 2010, 2011: [1], [2]), we plan to make use of the recent measurements made by the AKARI satellite, to present the evaluation of the input from different types of sources to the total IR flux of Large Magellanic Cloud (LMC) at different wavelengths. Since the metallicity in the interstellar matter and morphology of LMC are different from the Milky Way, it will provide a clue to bridge our understanding of IR sources in different stages of galaxy evolution.

Next, we discuss the impact of this evaluation for models of IR radiation from general irregular galaxies.

Keywords: dust; infrared; galaxies: irregular; galaxies: spiral; stars: evolution.

References

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