FAR-IR GALAXY COUNTS EXPECTED IN THE IRIS SURVEY

T.T. TAKEUCHI, H. HIRASHITA, T. G. HATTORI AND K. OHTA
Dept. of Astronomy, Kyoto Univ.
Kitashirakawa Oiwake-cho, Sakyo-ku, Kyoto, 606-01, Japan

AND

H. SHIBAI
Division of Particle and Astrophysical Sciences, Nagoya Univ.
Furo-cho, Chikusa-ku, Nagoya 464-01, Japan

1. Introduction

Infrared Imaging Surveyor (*IRIS*, officially Astro-F) is a satellite which will be launched in the winter of 2003. The main purpose of the *IRIS* mission is an all sky survey in the mid- and far-IR with a flux limit much deeper than that of *IRAS*. In order to examine the performance of the survey and to find a suitable set of bandpasses for tracing galaxy evolution and picking up protogalaxy candidates as effective as possible using *IRIS*, we estimated the FIR galaxy counts based on a simple model with various sets of cosmological parameters and evolution types.

2. Method and Conclusion

We adopted a multicomponent model consisting of cirrus and starburst components for galaxy spectra, and the nearby FIR luminosity function derived from that of *IRAS* galaxies. We derived the $\log N$-$\log S$ and N-z relations for: 1) no evolution, 2) pure luminosity evolution, and 3) pure density evolution with various sets of cosmological parameters (H, q_0). The results are consistent with those obtained with *IRAS*, *ISO*, and *COBE*. Picking up protogalaxy candidates only by FIR colors is possible, although the contamination of nearby faint objects would be significant.

486