

[AK03] Responsivity Correction in AKARI/FIS Data Reduction

Sang Hoon Oh¹, Hyung Mok Lee¹ and AKARI/FIS Data Reduction Team²¹*Seoul National University*, ²*Institute of Space and Astronautical Science*

We present the responsivity correction method which has been implemented on the data reduction pipeline software of AKARI Far-Infrared Surveyor (FIS). Ge:Ga extrinsic photoconductive detectors are employed in FIS. It generally shows radiation-induced effects such as unstable enhancement of the detector responsivity which decays very slowly after heavy irradiation of high energy particles in space. It affects flux measurement of astronomical objects and degrades the accuracy of data. Since it is unavoidable that AKARI passes through South Atlantic Anomaly (SAA) due to AKARI's orbit where the high energy protons are trapped by the Earth's magnetic field, FIS also suffers such radiation-induced effect. In order to suppress the radiation-induced effect, bias voltage higher than the breakdown level across the detector is applied (bias boost), and it restores the responsivity effectively. However, there exist the residual effect of irradiation even after the bias boost and also side-effect of the bias boost itself. In addition, a single event of highly energetic particle hit to the detector outside the SAA causes sudden enhancement in responsivity followed by slow decay. We have adopted two- or three-component exponential function which is based on physical interpretation of behaviour of the neutral donor occupance. We fit them to the responsivity change curves to correct those effects. We found that this method yields fitting residuals comparable to the detectors noise levels.

[AK04] Early Results of the *AKARI* Supernova Remnant ProjectBon-Chul Koo¹, Ho-Gyu Lee¹, Dae-Sik Moon², Jae-Joon Lee¹, Ji Yeon Seok¹,
Hyung Mok Lee¹, Seung Soo Hong¹, Myung Gyoon Lee¹, Hidehiro Kaneda³,
Woong-Seob Jeong³, Takashi Onaka⁴¹*Department of Physics and Astronomy, Seoul National University, KOREA*²*Department of Physics and Astronomy, University of Toronto, CANADA*³*Institute of Space and Astronautical Science, JAXA, JAPAN*⁴*Department of Astronomy, University of Tokyo, JAPAN*

We have been doing observations of supernova remnants using Infrared Camera and Far-Infrared Surveyor onboard *AKARI*. We have about ten sources to be observed in Phase 2A. We will present early results of the project including a serendipitous detection of an infrared bright supernova remnant in the Small Magellanic Cloud.