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AKARI observation of the fluctuation of the near-infrared background

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The fluctuation analysis of the near-infrared background was performed based on the NEP survey at 2.4, 3.2 and 4.1 μm carried out by Japanese infrared astronomy satellite, AKARI. The excess fluctuation powers were detected at the angles larger than 100 arcsec, and they show turnover at tens of arcmin. The excess fluctuating power has a blue stellar spectrum, and correlation between wavelength bands is fairly good. The observed fluctuation is significantly larger than that expected from known foreground sources and could be attributed to pop.III stars origin. The observed angular power spectrum is consistent with theoretical prediction assuming biased star formation that traces the distribution of dark matter.

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