

T10b Galaxy Clusters in the AKARI North Ecliptic Pole Field

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Galaxy cluster is the best laboratory for studying the environmental effect of galaxy evolution, so it is fundamental and necessary to search for galaxy clusters for the purpose of further research. We used the data catalog from the AKARI North Ecliptic Pole (NEP) Survey, which was conducted by the AKARI Infrared Camera (IRC) with unique 9 filters in mid-infrared from 2 to 24 μm at a 5.4-deg² area. The entire AKARI NEP field has been observed by the Subaru Hyper Suprime-Cam (HSC) as the optical counterpart. To select galaxy cluster candidates, we binned our sample with redshift, and the high density peaks were defined in each redshift bins if its local density was $3\text{-}\sigma$ higher than median. The local density of each object was defined by the k-th nearest neighborhood method. The galaxy cluster candidates were determined by applying the friend-of-friend algorithm to all high density peaks. Based on the confirmation on the optical image of HSC and the color-magnitude diagram, we are confident that our method for cluster selection is reliable and our galaxy cluster candidates are promising.