

X29a **Early results of Jansky VLA S-band deep observation toward dusty starburst galaxies in the proto-cluster around radio galaxy 4C23.56**

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We report early results on the proto-cluster around radio galaxy 4C23.56, based on our JVLA (S-band) deep continuum observation. Our narrow band survey, which traced H-alpha emitters(HAE) using Subaru, has revealed that this proto-cluster is in a great overdensity region which exceeds 5 times more in volume density than blank fields. This proto-cluster are likely the progenitors of present-day cluster elliptical galaxies. AzTEC/ASTE deep 1.1 mm imaging and PdBI 1.8 mm high-resolution observations were conducted as an follow-up observation, and the observations revealed that some (sub)mm galaxies(SMGs) are overlapped with HAEs implying the heavily dust-obscured starbursts, while the redshifts of SMGs are poorly constrained. It is still ambiguous how star forming rates of each galaxies are, and whether SMGs are really associated with this proto-cluster. Our μJy -JVLA deep continuum data sets shed light on these questions with $\sim 1'' \times 1''$ resolution and I will report the latest results of this. Finally, I will discuss about what this proto-cluster would mean to the galaxy formation and its evolution.