

“THE MASS OF DARK MATTER HALOES ASSOCIATED WITH LUMINOUS SUB-MM GALAXIES”

Sources and Detection of Dark Matter and Dark Energy in the Universe
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Abstract:

We have obtained deep sub-mm maps of the $z=3.1$ proto-cluster, SSA22. We find a large excess of bright sub-mm sources ($S_{850}>5\text{mJy}$). A statistically significant, non-zero lag cross-correlation between the sub-mm sources and the optically selected Lyman break galaxies suggests an optically invisible component to the proto-cluster. We use the strength of the cross-correlation to constrain the mass of dark matter haloes associated with luminous sub-mm galaxies.