Witnessing the formation of galaxy clusters at redshift $z \sim 3$

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ABSTRACT

We discuss the first results drawn from our APEX/LABOCA observations of two high-z candidate protoclusters, discovered in Herschel surveys.

APEX/LABOCA has followed up Herschel sources towards two fields containing an overdensity of objects. Fields have been selected through far-infrared colour criteria suited to pin point high-z sources, very likely physically associated to a lensed source at the same redshift.

APEX/LABOCA, together with Herschel, and near-IR observations are used to confirm the nature of these fields as hosts of a protocluster, which is strengthening the case of gravitational lensing as a tool to find high-z galaxy clusters in the process of formation. We discuss the identification and the nature of these sources, and the challenge that this kind of overdensities poses to current Cosmological models.