

**ABSTRACT ONLY - ORAL
PRESENTATION**

**GALAXY CLUSTER DYNAMICAL STATES
AND THEIR RELATIONSHIP TO THE
PRESSURE PROFILES**

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Recent Sunyaev-Zel'dovich (SZ) effect surveys of galaxy clusters such as the Planck surveyor or the South Pole Telescope have found well over a thousand objects, sufficient to constrain cosmology to a high precision through the cluster number count. These low-resolution surveys, however, cannot differentiate between clusters with different dynamical states from the SZ signal profile, and thus assume a universal template to characterize the cluster masses. This is one of the leading sources of systematic errors that limits the resulting cosmological precision. In our work we combine high-resolution SZ effect data from the APEX-SZ experiment, together with low-resolution data from Planck, to get a precise understanding of the cluster pressure profiles and their relationship with cluster dynamical states. The goal is to improve the current working templates for the cluster SZ signal and to pre-select clusters based on their dynamical states for precision cosmology.

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