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## Large Scale Density profiles surrounding extremas in the density field as cosmological probes

In this work I show that we can reconstruct the large scale density profiles surrounding extrema in the density field such as Dark Matter Halos or Cosmic Voids (their exact symmetric in the initial conditions).

I show that those profiles can be parametrized in such a way that they conserve some inner properties in their evolution whatever the underlying dynamics. Using N-body simulations of  $\Lambda$ CDM cosmology, we show that this conserved quantity can be used to reconstruct the analytical profile at any redshift.

The observed stacked profiles, combined with the peculiar velocity profile, can then be used to constrain directly cosmology and in particular Dark Energy and even the nature of Gravity itself. This approach will find its interest in the upcoming Large Scale Surveys which will probe such cosmological scales with a sufficient statistics.

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