

## Abstract

We used a model for the distribution of void sizes and its evolution in the context of hierarchical scenarios of gravitational structure formation based on the theory of the excursion sets of  $F(r, R_f)$ . The four-dimensional initial density perturbation field smoothed with filters of radii  $R_f$  was introduced by Bond et al. (1991). We find that at any cosmic epoch, the voids have a size distribution which is well-peaked about a characteristic void size which involves self-similarity in time. Another result of our study is that the population of voids grows by time.