

Abstract Submitted
for the NES07 Meeting of
The American Physical Society

New Statistical Methods to Analyze the Sloan Digital Sky Survey Data YONGFENG WU, DAVID J. BATUSKI, ANDRE KHALIL, University of Maine — The large-scale distribution of the galaxies can be characterized by various statistical and topological methods, but commonly used ones often have large uncertainties. Here we use The Metric Space Technique. It allows multiple measures to be simultaneously applied for quantitative analysis of any type of structure distribution. All such distributions are considered to be elements of multi-parameter space, and the analysis is based on considering a sample's output functions, which characterize the distributions in multi-parameter space. We also use Hexagon Cell method to quantify the filamentary structure in our samples of galaxies. We use a dozen slices of a volume of space containing many newly measured galaxies from Sloan Digital Sky Survey Data Release 5. By systematically studying hundreds of thousands of galaxies, we construct a comprehensive map of the local Universe, which allows us to measure some of the fundamental parameters that define the large-scale structure in the cosmos. We compare results with that of mock samples of galaxies from N-body simulations.

Yongfeng Wu
University of Maine

Date submitted: 11 Apr 2007

Electronic form version 1.4