

Cosmic Cartography 2022: Exploring the Cosmic Web and Large-Scale Structure



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CLIMBER Mock Catalogs: Optimizing HOD Constraints from Next-Generation Surveys

Friday, 11 March 2022 10:50 (20 minutes)

We have generated mock catalogs for the upcoming PFS, MOONS, and WAVES surveys to help quantify and optimize their constraining power on HOD models. To assign photometry into the UniverseMachine empirical model, we have developed the CLIMBER procedure using UltraVISTA photometry. We compare different targeting strategies by varying the area and targeting completeness, and quantify the uncertainty of the two-point correlation function. We demonstrate that the PFS and MOONS measurements will be primarily dominated by cosmic variance, not shot noise, motivating the need for increasingly large survey areas. On the other hand, the WAVES survey, which covers a much larger area, will strike a good balance between cosmic variance and shot noise.

Presenter: PEARL, Alan

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