Contributed Talk

Splinter Euclid

Reconstructing cosmological initial conditions using Bayesian statistics

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To take full advantage of the constraining power of future experimental probes of large scale structure like *Euclid*, we have to develop and deploy improved statistical methods. Here, I will review a Bayesian framework introduced to infer the initial conditions that gave rise to the large scale structure that we observe today. I discuss recent advances in our theoretical understanding that allow to establish a principled connection between the underlying dark matter field and observable (biased) tracers thereof, like galaxies. After demonstrating how this model can be integrated into our statistical framework to faithfully reconstruct initial conditions on large scales that are exact up to the three point function statistics, I conclude my presentation providing a worked example analyzing simulated data.