

1 The MultiNest Algorithm

The MultiNest algorithm is a Bayesian inference tool for parameter space exploration and model selection that has come to widespread use in Astrophysics and Cosmology over the past years.

It builds upon the nested sampling technique producing the Bayesian evidence by integrating the likelihood associated with a given set of parameters over the multidimensional parameter space, and creates samples of the posterior distribution as a by-product.

The novel way in which MultiNest represents the sampled volume by an optimized set of ellipsoids makes it especially powerful for exploring multi-modal posteriors or posteriors with curving degeneracies in high dimensions.

Our implementation follows the full description of the algorithm in Feroz et al. (2009).

2 Performance

put comparison tables and colorful pictures here

3 User Instructions

this is where the README-equivalent can go

References

F. Feroz, M. P. Hobson, and M. Bridges. MULTINEST: an efficient and robust Bayesian inference tool for cosmology and particle physics. *MNRAS*, 398: 1601–1614, October 2009. doi: 10.1111/j.1365-2966.2009.14548.x. [ADS].