13/12/13   MultiNest   APC523 project

Functional Entities and Data Passing

Ellipsoidal Partitions → [Initialize Everything] ← request, N

coor, L, cluster info →

[Random Sampler]

cluster info, X → ← new Sample (coor, X) [MultiNest Driver] ← likelihood, cov, a², max → y/n no → [Check for Stopping Criterion]

coor, L ↑ request

[Draw Sample]

[16 Member Sample Ellipsoid]

L ↑ coor

[Likelihood Evaluation]

cluster info, X / coordinates, cluster info, N / y/n no / coordinates, N [Check for Clustering Criterion]

[Ellipsoid Scaling]   [Ellipsoidal Partitioning]

L [Find Enclosing Ellipsoid]

[k-means]

θ_j ↑ u_j

[Coordinate Transform]

[Likelihood(θ_j)]   [Prior(θ_j)]

part of Nested Sampling / Statistical Physics Process

specific to MultiNest

N is number of live samples

i is iteration index ($X_i = e^{-i/N}$)

z^2max is tolerance for final evidence uncertainty

cluster info is a list of Ellipsoid (objects) with the center, covariance matrix & enlargement factor for each

u_j are MultiNest hypercube coordinates

θ_j are real parameter space coordinates