
INSEA

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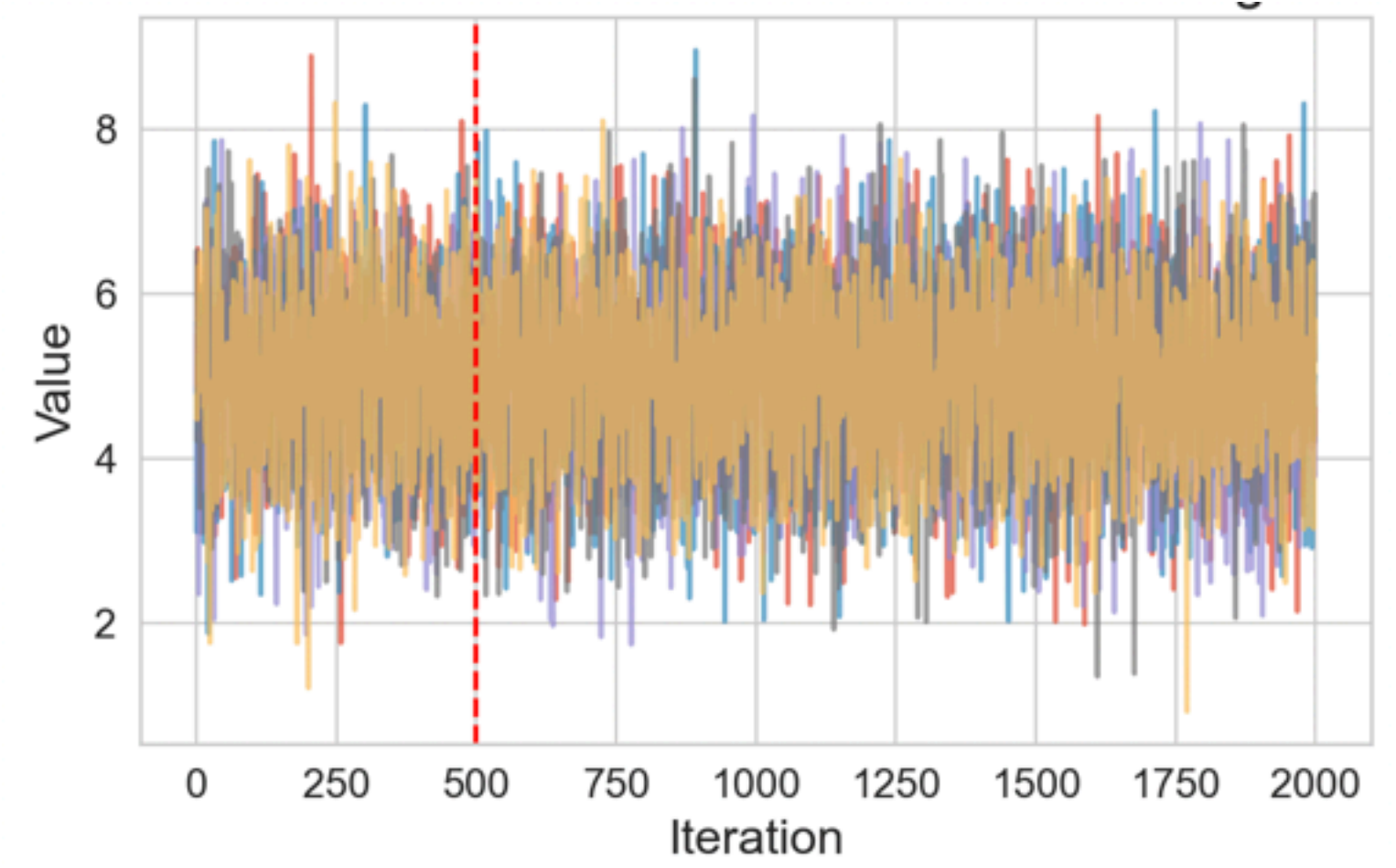
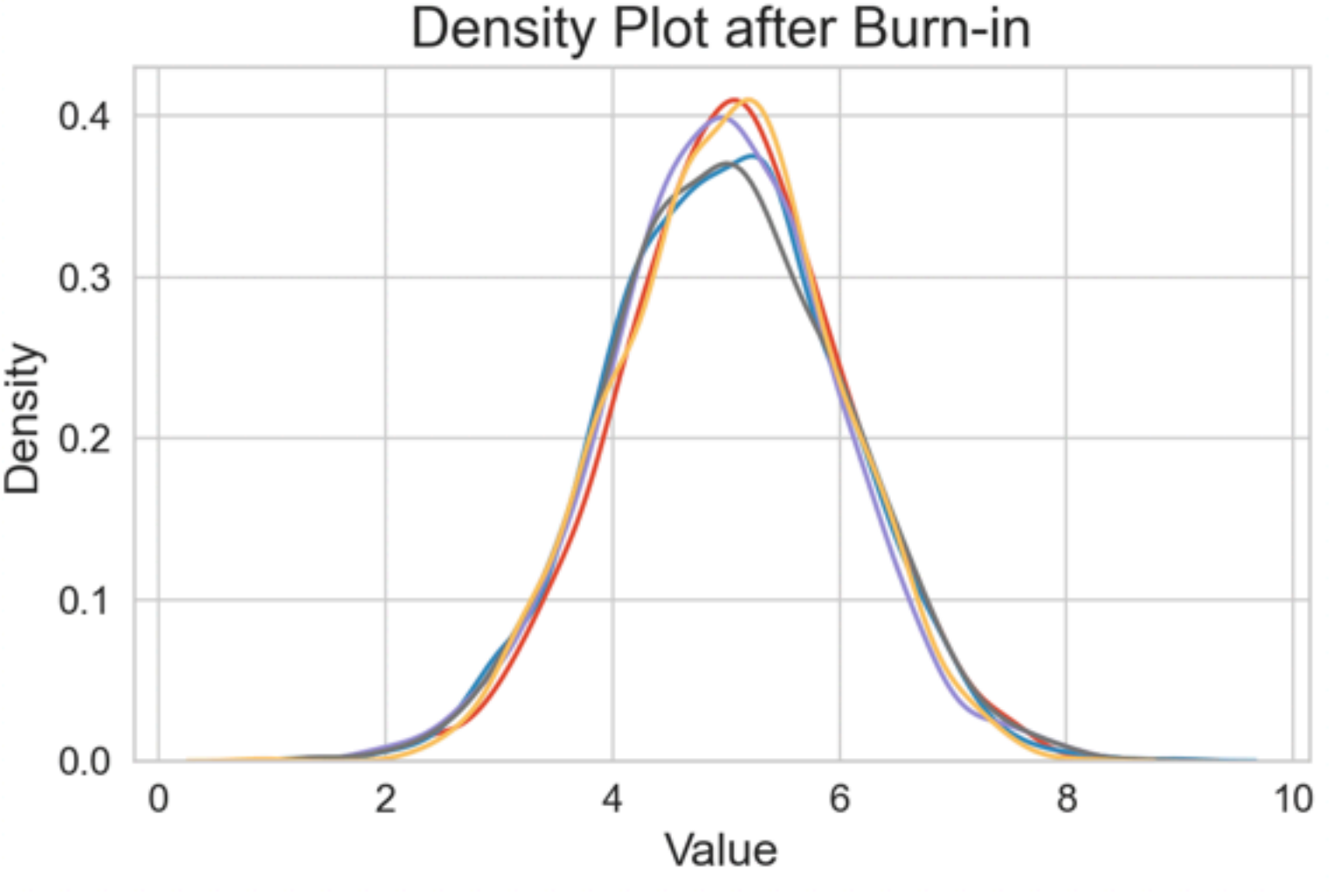
MCMC diagnostics in 1D

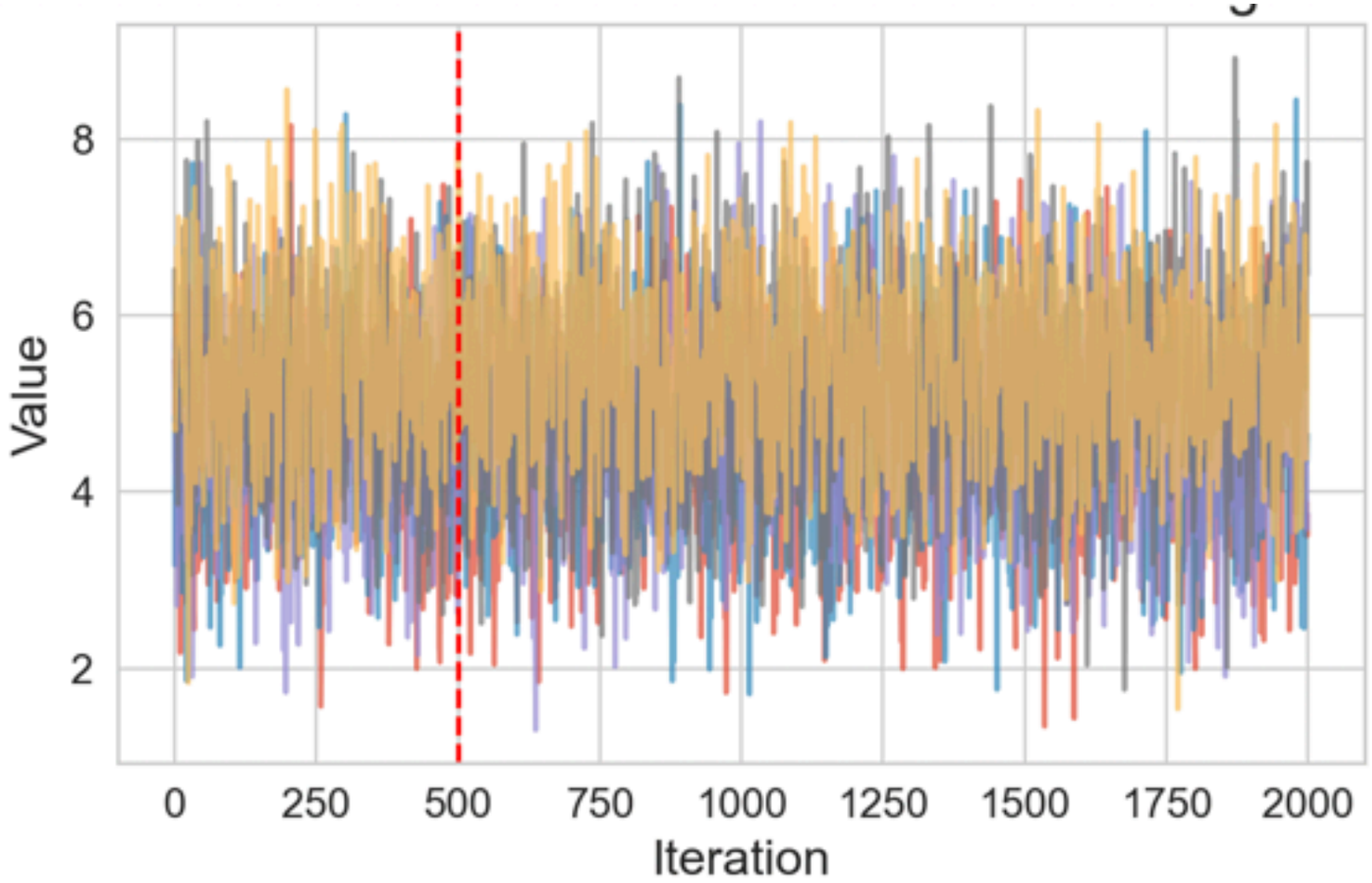
Metrics

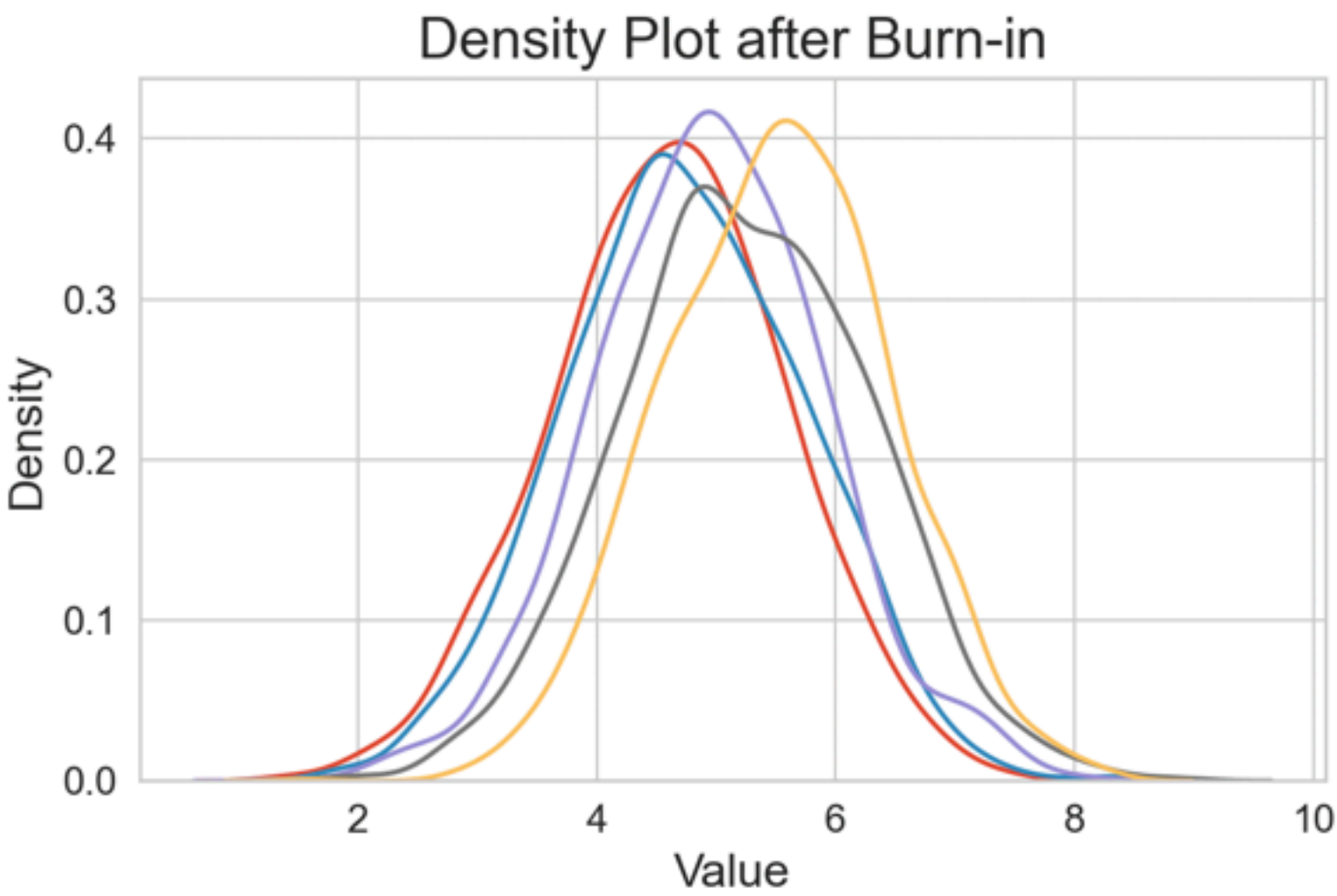
$= 1.005$


8
6
4
2
Value
0
250
500
750
1000
1250
1500
1750
2000
Iteration


Density Plot after Burn-in
0.4
0.3
0.2
0.1
0.0
Density
0
2
4
6
8
10
Value

Converging



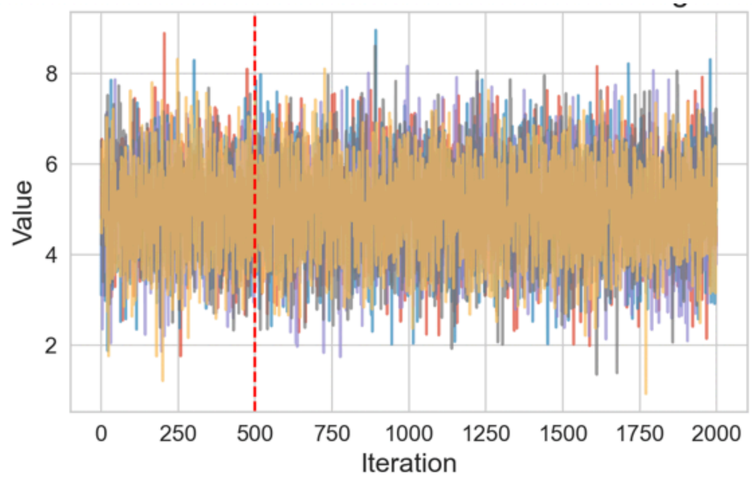


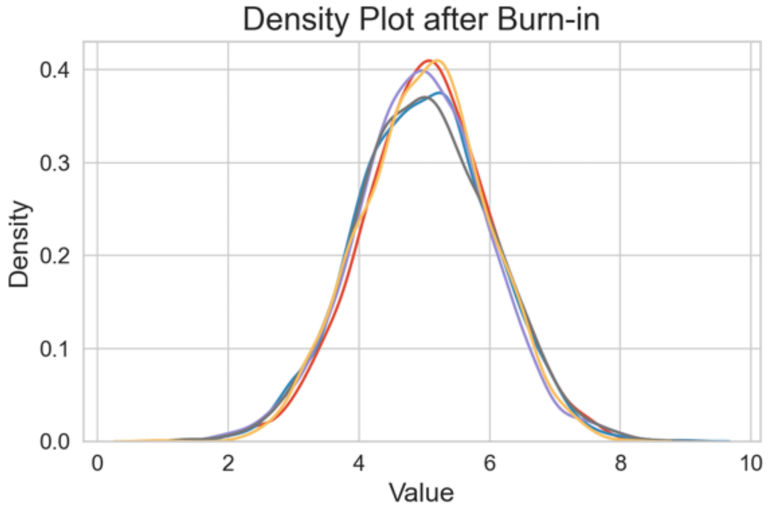
$\widehat{R} = 1.025$

Not converging

MCMC diagnostics in 1D

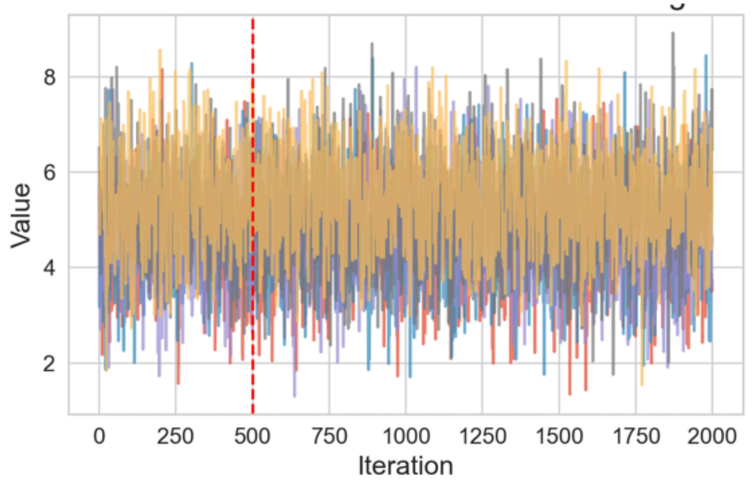
Metrics

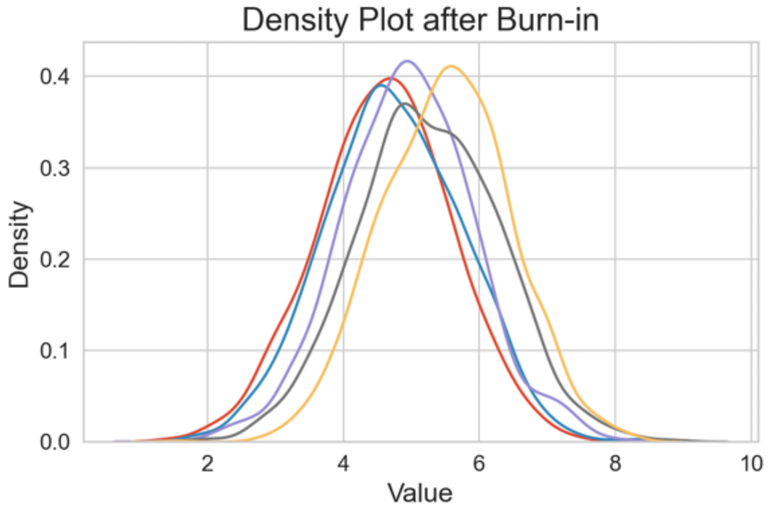




$\widehat{R}$ = 1.005

Converging





$\widehat{R}$ = 1.025

Not converging

1. Pourquoi Monte-Carlo ? (Exemple de modèle hiérarchique)
2. Introduction à la méthode Monte-Carlo (historique, PRNG)
3. Algorithmes de simulation i.i.d (PRNG, transformation, rejet)
4. Méthodes MCMC (Gibbs, Metropolis)
5. Diagonstics de convergence MCMC
6. Méthodes MCMC avancées (Langevin, HMC, NUTS)

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On estime la moyenne d'une loi π avec deux estimateurs:

1. I_0 : Moyenne de N_0 échantillons i.i.d $\sim \pi$
2. I_1 : Moyenne de N_1 échantillons $\sim \pi$.