

Ensemble Average Autocorrelation

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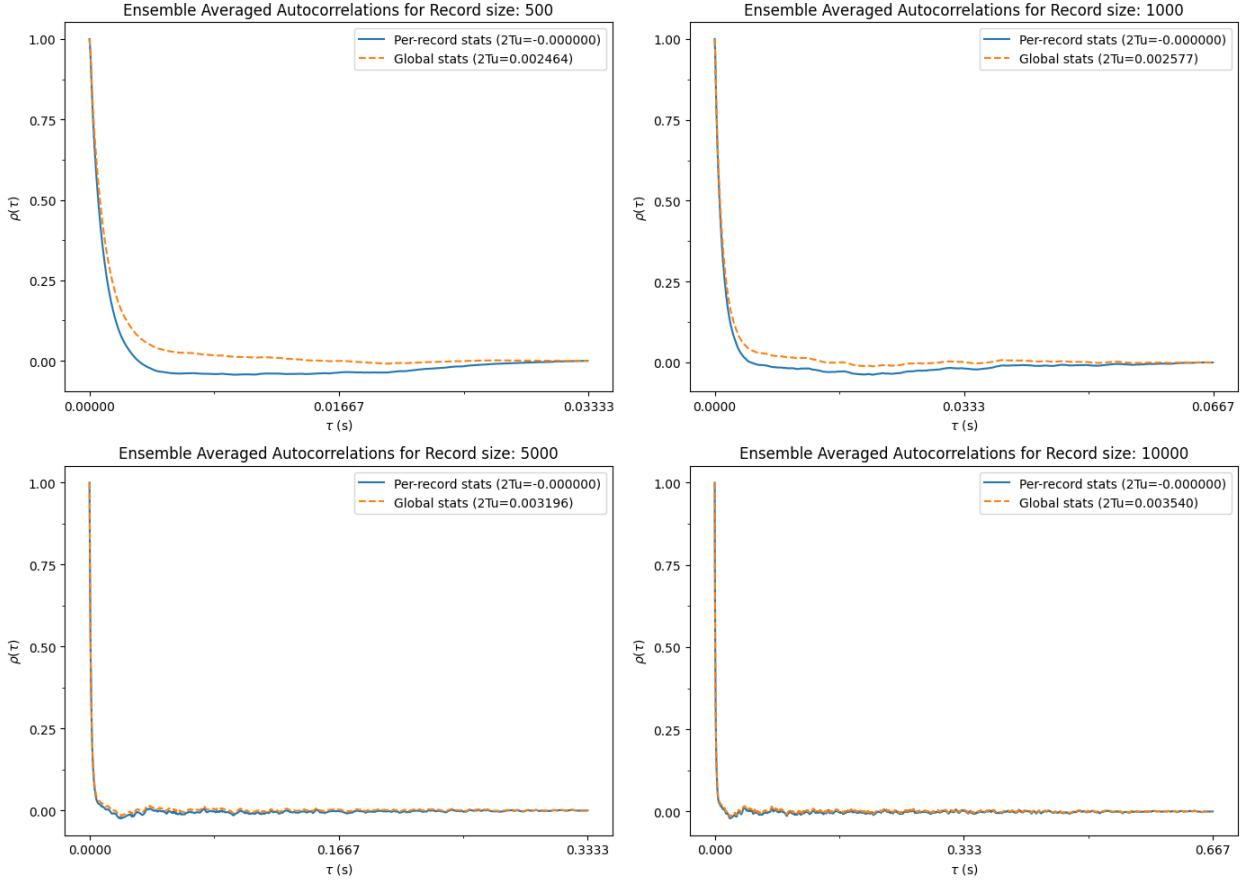


Figure 1: Autocorrelation plots with $2T_u$ calculated using $k = N - 1$

1 Autocorrelation

The plot shows the Ensemble Averaged Autocorrelations for four record sizes. The solid blue line shows the autocorrelation using the per-record statistics, and the orange dashed line shows the autocorrelation using the global statistics. The autocorrelations are calculated using eq. 1 and $2T_u$ is calculated using eq. 2.

$$\rho_j = \frac{\frac{1}{N} \sum_{i=1}^{N-|j|} (X_i - \mu)(X_{i+|j|} - \mu)}{\sigma_X^2} \quad (1)$$

$$2T_u = 1 + 2 \sum_{k=1}^N \rho_k \quad (2)$$