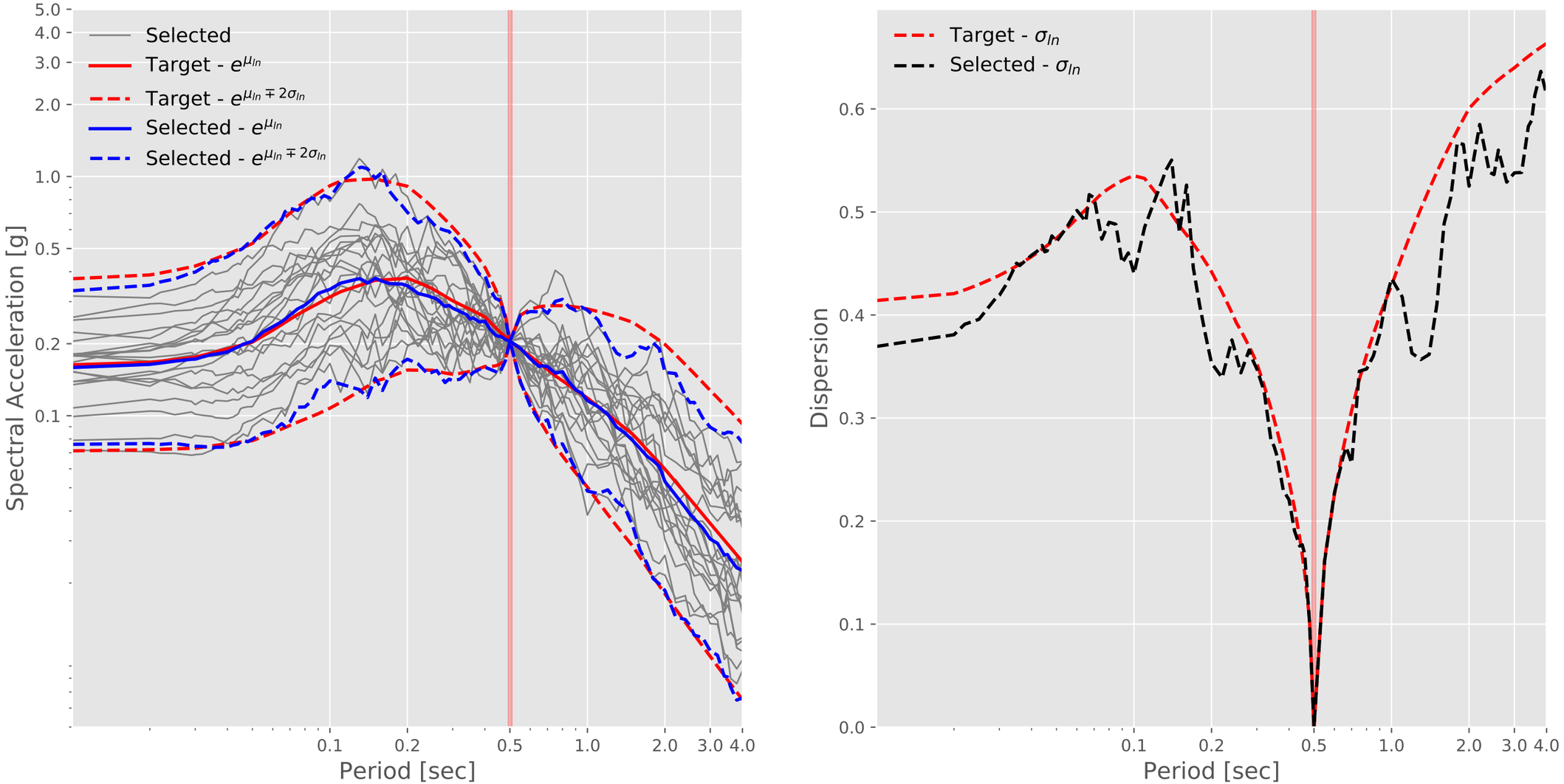Target Spectrum vs. Simulated Spectra