

Recurrence Plots for Diesel Engine Variability Tests

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Cycle-to-cycle variations of maximum pressure in a diesel engine are studied by using the methods of recurrence plots and recurrence quantification analysis. The pressure variations are found to exhibit strong periodicities in low frequency bands and intermittent oscillations at higher frequencies. The results are confirmed by wavelet analysis.

Key words: Combustion; Pressure Oscillations; Recurrence Plots; Recurrence Quantification Analysis.