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Correlations in Coupled Chaotic Diode Lasers JOSE RIOS LEITE, WENDSON BARBOSA, EDISON ROSERO, Departamento de Fisica/ Universidade Federal de Pernambuco — Correlations in different time scales were studied experimentally in the chaotic time behavior of pairs of electrically coupled diode lasers. As the lasers are induced to chaotic oscillation by optical feedback, we find features with in-phase and anti-phase fluctuations that appear when the lasers are coupled in parallel from a high impedance current source. The chaotic synchronization of low frequency power drop fluctuations is observed simultaneously with fast anti-phase power fluctuations associated to pump current competition from the common source.

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