

Phase Synchronization of Coupled Rossler Oscillators: Amplitude Effect

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Abstract: Phase synchronization of two linearly coupled Rossler oscillators with parameter misfits is explored. It is found that depending on parameter mismatches, the synchronization of phases exhibits different manners. The synchronization regime can be divided into three regimes. For small mismatches, the amplitude-insensitive regime gives the phase-dominant synchronization; When the parameter misfit increases, the amplitudes and phases of oscillators are correlated, and the amplitudes will dominate the synchronous dynamics for very large mismatches. The lag time among phases exhibits a power law when phase synchronization is achieved.

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