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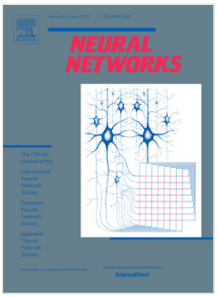

Synchronized bifurcation and stability in a ring of diffusively-coupled neurons with time delay

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Highlights

1. This type of architecture for a ring of diffusively-coupled neurons is new.

2. Regard τ and β as two parameters in analyzing the synchronized dynamics of partial-differential equation (PDE) system.

3. Diffusion may make the ring system synchronous.

4. Diffusion to a stable delay-differential equation (DDE) system may make it unstable.

5. The coexistence of bifurcating periodic solutions and bistability or instability and bistability.

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