# Chimera states in neural networks: interplay of fractal topology and delay

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Chimera states are an example of intriguing partial synchronization patterns emerging in networks of identical oscillators. They consist of spatially coexisting domains of coherent (synchronized) and incoherent (desynchronized) dynamics [1]. We analyze chimera states in networks of FitzHugh-Nagumo oscillators with fractal (hierarchical) connectivities [2], and elaborate the role of time delay introduced in the coupling term [3, 4]. In the parameter plane of coupling strength and delay time we find tongue-like regions of existence of chimera states alternating with regions of synchronization. We demonstrate that by varying the time delay one can deliberately stabilize desired spatio-temporal patterns in the system.

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