

A biophysical model of AMPA receptor dynamics

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The network activity under the model is inherently homeostatic as the DCM rewiring dynamics are bounded from above by a conserved pre- and post-synaptic strength degree distribution. Hebbian potentiation of synaptic strength emerges since the DCM preferentially rewires neurons with proportionally many unconnected nanomodule resources; that is, those neurons which were recently active. The coupling of the structural to the functional plasticity dynamics by limiting synapse deletion to silent synapses further produces the Hebbian potentiation of synapse number between similarly active neurons.

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