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Synaptic Transmission: From Molecular to Neural Network Levels 2.0

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Message from the Guest Editors

It is well known that in the central nervous system, the number of neurons is around 10^{12}, and the number of synapses can reach a thousand billion. This anatomical complexity is heightened by the complexity of mechanisms underlying synaptic transmission. Every connection adds processing features to the network activity, originating an ensemble that shows emerging properties that are difficult to track back to the single synapse level. Here comes the need for both bottom-up and top-down approaches to understand brain activity: how do the different components of neural machinery interact to generate such complex systems? How can the understanding of new pathways be used for pathologies' treatments? Investigations at these two levels are both needed to reach a comprehensive view of brain activity.

This Special Issue aims to provide a broad picture of the latest discoveries on synaptic transmission and its impact on network activities. Both experimental and computational works are welcomed, unraveling new properties of specific synapses or how they affect neural networks activity, both in physiological and pathological conditions.

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Message from the Editor-in-Chief

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