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Neural Plasticity

Special Issue on

Plasticity, Neural Energy, and Global Neural Coding

CALL FOR PAPERS

Plasticity is closely related to almost every aspect of neural processing, including propagation of neural activity, integration of neural signals, and action potential generation. It endues our brain with ability to learn from sensory inputs, to form memories and recover from injuries.

The human brain demands high energy, most of which is consumed by subthreshold neural activity. Regulatory mechanism of energy delivery ensures the basic needs of neural coding of every neuron and a functional neural network. Such a mechanism itself might take part in the process of neural coding, which is of considerable interest for further study. During the past years, some studies have provided evidence through experiments regarding how energy metabolism can modulate brain function, ranging from behavior to synaptic plasticity and brain development. A global neural coding method is of great importance to understand the findings in neuroimaging experiments. Thus, the neuroscience field needs new models to better understand how energy metabolism regulates plasticity and vice versa and how a global neural activity is precisely related to neural energy.

Papers in this issue will review and summarize the current understanding of the relationship among plasticity, neural energy, and neural coding, to probe important computational and experimental neural issues. The issue also will investigate theories that could describe the relationship between global neural coding and neural energy. Finally, submission of ongoing original innovative work in this area is highly encouraged.

Potential topics include, but are not limited to:

- ▶ Quantitative analysis of energy consumption of functional neural network
- ▶ Relationship between neural energy coding of functional neural network and cognitive behavior
- ▶ Structure and pattern of default mode neural network
- ▶ Computer simulation of subthreshold energy and comparison and analysis of subthreshold energy and energy of functional neural network
- ▶ Function and effect of subthreshold energy in the default mode neural network
- ▶ Quantitative analysis of the difference of structure and pattern of default mode neural network between normal state and pathologic state

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/np/nene/>.

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