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— Call for Papers —  
*Annals of Operations Research*

**Special Volume**  
*Applications of Operations Research for Neuroscience*

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The journal **Annals of Operations Research** invites submissions of papers to a special volume on **Applications of Operations Research for Neuroscience**.

Neuroscience is a multidisciplinary science that is concerned with the study of the structure and function of the nervous system. It comprises aspects of physiology, cellular and molecular biology, as well as behavioral and cognitive science.

Recent technological and theoretical advances offer promising opportunities for better understanding of the nervous system at the quantitative level. New optogenetic, in vitro and in vivo multielectrode recording, neuroimaging, brain imaging, and other modern techniques provide high-quality data that can be used in elucidating the fundamental mechanisms of information processing in neural systems. The rapidly growing pool of experimental data has triggered the development of new mathematical models, which can provide new insights into the functioning of the nervous system at various scales ranging from that of molecular biology to that of the organizational principles of behavior and cognition. Sophisticated analyses of intracellular signalling or dynamics in heterogeneous neural networks, conditional behavior or connections of brain regions in decision-making lead to theoretical problems addressed by operations research.

The special volume will cover a broad range of topics in the field of neuroscience, which use operations research approaches and methods. Potential topics include, but are not limited to, the following areas of neuroscience:

- intracellular signalling and regulation
- synaptic plasticity
- dynamics in heterogeneous neural networks
- intelligent systems and control
- perceptual, cognitive, and behavioural functions
- learning and memory
- spatio-temporal network analysis
- combinatorial optimization
- signal and information processing
- neuroimaging and functional brain imaging processing
- computational modelling and simulation

**The use of methods from modern operations research is a prerequisite for any paper submitted to this special volume to enter the reviewing process.**

*Annals of Operations Research* is abstracted and indexed in the following databases: Science Citation Index, Science Citation Index Expanded (SciSearch), Journal Citation Reports/Science Edition, SCOPUS, INSPEC, Zentralblatt Math, Google Scholar, EBSCO, CSA, ProQuest, ABS Academic Journal Quality Guide, Academic OneFile, Academic Search, Computer Abstracts International Database, Computer Science Index, CSA Environmental Sciences, Current Contents/Engineering, Computing and Technology, DBLP, ECONIS, Expanded Academic, International Abstracts in Operations Research, Mathematical Reviews, OCLC, SCImago, STMA-Z, Summon by ProQuest.

**Guest Editors:** Erik Kropat, Ruben A. Tikidji-Hamburyan, Gerhard-Wilhelm Weber

**Important Dates:** Submission deadline of full papers: March 31, 2015

**Submission Details:** The format of manuscripts for the *Annals of Operations Research* as well as guidelines can be found on the web page of Springer, the publisher of the journal:

<http://www.springer.com/business/operations+research/journal/10479>.

Authors should submit a cover letter mentioning that the paper is for a special volume and a manuscript via the journal's online submission site:

<http://www.editorialmanager.com/anor>

When prompted, please select the article type “S.I.: OR in Neuroscience” so that your paper will be directed to the editors.

All papers submitted for publication will be carefully refereed. In case of any question please contact by e-mail one of the following guest editors:

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