

# Resource Summary Report

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## The Book of GENESIS

RRID:SCR\_001657

Type: Tool

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### Proper Citation

The Book of GENESIS (RRID:SCR\_001657)

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### Resource Information

**URL:** <http://www.genesis-sim.org/GENESIS/bog/bog.html>

**Proper Citation:** The Book of GENESIS (RRID:SCR\_001657)

**Description:** Book with a downloadable version of the second edition of a practical introduction to the interdisciplinary field of computational neuroscience through the use of the GENESIS simulator. It is designed to be a step-by-step tutorial for professionals, researchers and students working in fields ranging from neuroscience to bioengineering, medicine, artificial neural networks and the cognitive sciences. Part I of the book teaches concepts in neuroscience and neural modeling by means of interactive computer tutorials on subjects ranging from neuronal membrane properties to cortical networks. These chapters, written by several contributors, allow the student to perform realistic simulations and experiments on model neural systems and provide the necessary background for understanding and using the tutorials. The simulations are user-friendly with on-line help and may be used without any prior knowledge of the GENESIS simulator or computer programming. Part II is intended to teach the use of the GENESIS script language for the construction of one's own simulations. This part will be useful for self-study by researchers who wish to do neural modeling, as well as students. It follows approximately the same sequence of topics as Part I, and uses parts of the tutorial simulations as examples of GENESIS programming. Several of these are based on recent research simulations which have been published in the neuroscience literature, but which have not been previously available for use outside the laboratories of the original researchers. Thus, the reader may modify these simulations and use them as a starting point for the development of original simulations. In addition to many revisions and additions to existing chapters, this second edition includes two new chapters on the modeling of biochemical signaling pathways and on the use of GENESIS on parallel computers and networks of workstations. Other new additions include a section describing ways to implement synaptic modification (learning), a section describing uses of a new method for modeling of a wide variety of voltage and ionic concentration dependent channels, a description of improvements in the procedure for implementing fast implicit numerical methods in GENESIS simulations, and descriptions of many new GENESIS commands and simulation components.

**Abbreviations:** BoG

**Synonyms:** Book of GENESIS

**Resource Type:** data or information resource, book, narrative resource, training material

**Keywords:** computational neuroscience, neuroscience, bioengineering, medicine, artificial neural network, cognitive sciences, neural network, tutorial

**Availability:** Free, Available for download, Freely available

**Resource Name:** The Book of GENESIS

**Resource ID:** SCR\_001657

**Alternate IDs:** nlx\_153938

**Record Creation Time:** 20220129T080208+0000

**Record Last Update:** 20260729T044014+0000

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## Ratings and Alerts

No rating or validation information has been found for The Book of GENESIS.

No alerts have been found for The Book of GENESIS.

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## Data and Source Information

**Source:** [SciCrunch Registry](#)

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## Usage and Citation Metrics

We have not found any literature mentions for this resource.