

# Brain Dynamics Toolbox

## Version 2021a

Open software for simulating non-linear dynamical systems in Matlab.

The official guide to the **Brain Dynamics Toolbox**

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The *Brain Dynamics Toolbox* is open software for simulating non-linear dynamical systems in Matlab. It is intended for students and researchers in computational neuroscience but can be applied to any domain. It specifically solves initial-value problems in systems of Ordinary Differential Equations (ODEs), Delay Differential Equations (DDEs) and Stochastic Differential Equations (SDEs). Each of which can be extended to a system of Partial Differential Equations (PDEs).

The toolbox allows new dynamical systems to be rapidly prototyped and explored in an intuitive graphical application. Its hub-and-spoke software architecture allows interchangeable solver algorithms and plotting tools to be applied with no additional programming effort. Large-scale simulations can be run in user-defined scripts and the code for the model can be published independently of the toolbox.

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**Handbook for the  
Brain Dynamics  
Toolbox**  
Version 2020

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2018

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*“A fantastic (and open) resource for all interested in simulating dynamical systems in neuroscience”*  
— Olaf Sporns, Indiana University

BDTOOLBOX.ORG

Computational Neuroscience  
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## Download

The source code and training materials are available from <https://bdtoolbox.org>.

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