

Release Notes

Brain Dynamics Toolbox

Version 2017c

Currently in pre-release. Formal release anticipated late Sep 2017.

The formal release will coincide with the publication of the Handbook of the Brain Dynamics Toolbox. The handbook will be published in paperback and ebook formats by Amazon booksellers. The first chapter of the handbook will be made available for free on the [Brain Dynamics Toolbox](#) website.

Major new features in the toolbox include: (i) Improved dialog boxes for editing vector and matrix parameters. (ii) Saved solutions (sol) can now be loaded into the GUI at startup. (iii) Improved error handling for loading system definitions with missing functions. (iv) New neural-mass model DFCL2009 (Dafilis, Frascoli Cadusch & Liley, 2009).

Minor changes include: (i) Improved license checks in Hilbert and Correlation panels. (ii) Improved scrolling in the System-Save dialog box. (iii) Tweaks to the polar plot in the Hilbert panel. (iv) Replaced the BTF2003ODE model with BTF2003. (v) Bug fixes to the existing BTF2003SDE and BTF2003DDE models. (vi) Renamed the dde23hack solver to dde23a.

Requires Matlab 2014b or newer.

Version 2017b

Released 21 June 2017.

Major new features include: (i) Equation parameters and variables can now be directly manipulated from the workspace via the new bdGUI class properties (par, var0, var, lag, t). (ii) The System-Save menu now includes solution variables and display panel outputs. (iii) Three new display panels were added (bdHilbert, bdSurrogate, bdTrapPanel). (iv) Six new models were added (BTF2003ODE, BTF2003DDE, BTF2003SDE, FRRB2012, FRRB2012b, RFB2017). (v) Scrollbars were added to the Equations panel. (vi) All panels were refined to make their outputs more accessible to the workspace.

Requires Matlab 2014b or newer.

Version 2017a

Released 21 March 2017.

Major new features include: (i) Dynamic loading of GUI plot panels. (ii) Enhanced GUI class properties allow the solver output and panel objects to be accessed directly. (iii) New *sys* struct format with more flexible syntax for defining system parameters and variables. (iv) Improved validation of *sys* structs. (v) Time and Phase portraits now support graphic hold. (vi) All example models have been revised.

This version is not backwards compatible with version 2016a. In particular: (i) *sys.pardef*, *sys.vardef*, *sys.auxdef*, *sys.lagdef* were changed from cell arrays to struct arrays; (ii) *sys.gui* was renamed *sys.panels*; (iii) SDE function handles were renamed *sys.sdeF* and *sys.sdeG*; (iv) *bdCorrelationPanel* was renamed *bdCorrPanel*; (v) *bdSpaceTimePortrait* was renamed *bdSpaceTime*; (vi) *odeEuler* was renamed *odeEul*; (vii) *sdelto* was renamed *sdeEM*; (viii) *sdeStratonovich* was renamed *sdeSH*; (ix) *bdVerify* was renamed *bdSysCheck*; (x) *bdUtils* was renamed *bd*; (xi) The *gui.control* property was replaced by *gui.sys*, *gui.sol* and *gui.sox*; (xii) The *sys* fields *tspan*, *odesolver*, *odeoption*, *ddeolver* and *ddeoption* are no longer mandatory.

Important message to users migrating from 2016a to 2017a. Scripts written for 2016a will need to be modified to accommodate the changes above. We recommend using *bdSysCheck* when migrating old code. It detects obsolete and invalid *sys* fields.

Requires Matlab 2014b or newer.

Version 2016a

Released 24 Dec 2016.

The first public release of the Brain Dynamics Toolbox.

Requires Matlab 2014b or newer.