Matave Identification ToolBox

A State Space Approach

Version 4.5

State Space Realization Algorithms

Function name	***Description***	***Status***	***Model***
hokalman	Ho-Kalman-Kung Realization Algorithm	Done	MIMO
era	Eigensystem Realization Algorithm	Done	MIMO
eradc	Eigensystem Realization Algorithm Data Correlation	Done	MIMO
sbr	Step-Based Realization Algorithm	Done	MIMO
okid	Observer Kalman Filter IDentification	Done	MIMO

State Space Subspace Identfication algorithms

Function name	***Description***	***Status***	***Model***
moesp	Multivariable Output-Error State Space	Done	MIMO
pimoesp	Past Input Multivariable Output-Error State Space	Done	MIMO
n4sid	Numerical Algorithms For Subspace State Space System IDentification	Done	MIMO
asa	Arbitrary Subspace Algorithm	Done	MIMO
ort	Orthogonal Decomposition	Done	MIMO

Grey-Box model algorithms

Function name	***Description***	***Status***	***Model***
nlsim	Simulate a nonlinear state space model	Done	MIMO
nlss	Create a nonlinear state space model	Done	MIMO

Polynomal model algorithms

Function name	***Description***	***Status***	***Model***
arx	Autoregressive with exogenous input	Done	MISO
armax	Autoregressive Moving Average with Exogenous Input	Done	MISO
oe	Output Error estimation model	Done	MISO
tfest	Estimate a transfer function of time doman data	Done	SISO
rls	Recursive Least Square	Done	SISO

Analysis and filtering

Function name	*Description*	*Status*	*Model*
spa	Plot bode spectral analysis plot using Fast Fourier Transform	Done	NO
smoothing	Use the mouse cursor to do a hand-made-curve fitting	Done	NO
moavg	Use moving average filtering	Done	NO
moavg2	Use moving average filtering with another algorithm	Done	NO
lineq	Minimize the least square cost function to curve fit a straight line	Done	NO

Miscellaneous

Function name	*Description*	*Status*	*Internet connection*
updatemataveid	Update the Mataveid library	Done	Y