SBMLToolbox

MATLAB_SBML Structure

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Details of the structure of an SBML model in MATLAB.

Model

Fieldname	**Type**	
	C	**MATLAB**
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
SBML_level	unsigned int	mxArray of int32
SBML_version	unsigned int	mxArray of int32
name	char *	mxArray of char
id**	char *	mxArray of char
functionDefinition**	List of structures	array of structures of type FunctionDefinition
unitDefinition	List of structures	array of structures of type UnitDefinition
compartment	List of structures	array of structures of type Compartment
species	List of structures	array of structures of type Species
parameter	List of structures	array of structures of type Parameter
rule	List of structures	array of structures of type Rule
reaction	List of structures	array of structures of type Reaction
event**	List of structures	array of structures of type Event
[1]time_symbol**	N/A	mxArray of char

** ONLY in level 2

[1] if the MathML csymbol time has been used the symbol used is recorded in this field Multiple occurrences will be replaced with the symbol recorded here

Details of each of the structures within the Model structure are given below.

Compartment

Fieldname	**Type**	
	C	**MATLAB**
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id**	char *	mxArray of char
spatialDimensions**	unsigned int	mxArray of int32
size**	double	mxArray of double
volume*	double	mxArray of double
units	char *	mxArray of char
outside	char *	mxArray of char
constant**	int	mxArray of int32
isSetSize**	unsigned int	mxArray of int32
isSetVolume	unsigned int	mxArray of int32

* ONLY in level 1
** ONLY in level 2

Event (Level 2 ONLY)

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id	char *	mxArray of char
trigger	char *	mxArray of char
delay	char *	mxArray of char
timeUnits	char *	mxArray of char
eventAssignment	List of structures	array of structures of type EventAssignment

KineticLaw

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
formula	char *	mxArray of char
math**	char *	mxArray of char
parameter	List of structures	array of structures of type Parameter
timeUnits	char *	mxArray of char
substanceUnits	char *	mxArray of char

** ONLY in level 2

EventAssignment (Level 2 ONLY)

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
variable	char *	mxArray of char
math	char *	mxArray of char

FunctionDefinition (Level 2 ONLY)

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id	char *	mxArray of char
math	char *	mxArray of char

ModifierSpeciesReference (Level 2 ONLY)

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
species	char *	mxArray of char

Parameter

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id**	char *	mxArray of char
value	double	mxArray of double
units	char *	mxArray of char
constant**	int	mxArray of int32
isSetValue	unsigned int	mxArray of int32
** ONLY in level 2		

Reaction

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id**	char *	mxArray of char
reactant	List of structures	array of structures of type SpeciesReference
product	List of structures	array of structures of type SpeciesReference
modifier**	List of structures	array of structures of type ModifierSpeciesReference
kineticLaw	structure	structure of type KineticLaw
reversible	int	mxArray of int32
fast	int	mxArray of int32
isSetFast**	unsigned int	mxArray of int32
** ONLY in level 2		

Rule

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
formula	char *	mxArray of char
variable	char *	mxArray of char
species	char *	mxArray of char
compartment	char *	mxArray of char
name	char *	mxArray of char
units	char *	mxArray of char

SpeciesReference

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
species	char *	mxArray of char
stoichiometry	int* double**	mxArray of int32 mxArray of double
demoninator	int	mxArray of int32
stoichiometryMath**	char *	mxArray of char

* ONLY in level 1
** ONLY in level 2

Unit

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
kind	char *	mxArray of char
exponent	int	mxArray of int32
scale	int	mxArray of int32
multiplier**	double	mxArray of double
offset**	double	mxArray of double
** ONLY in level 2		

UnitDefinition

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id**	char *	mxArray of char
unit	List of structures	array of structures of type Unit
** ONLY in level 2		

Species

Fieldname	Type	
	C	MATLAB
typecode	char *	mxArray of char
notes	char *	mxArray of char
annotation	char *	mxArray of char
name	char *	mxArray of char
id**	char *	mxArray of char
compartment	char *	mxArray of char
initialAmount	double	mxArray of double
initialConcentration**	double	mxArray of double
substanceUnits**	char *	mxArray of char
spatialSizeUnits**	char *	mxArray of char
hasOnlySubstanceUnits**	int	mxArray of int32
units*	char *	mxArray of char
boundaryCondition	int	mxArray of int32
charge	int	mxArray of int32
constant**	int	mxArray of int32
isSetInitialAmount	unsigned int	mxArray of int32
isSetConcentration**	unsigned int	mxArray of int32
isSetCharge	unsigned int	mxArray of int32

* ONLY in level 1
** ONLY in level 2