Muscle cell model - Boyle & Cohen 2008 - Bug #25

Is the "f" rate variable in the calcium channel really inactivation?

17 Oct 2012 14:41 - Padraig Gleeson

Status:	New		**Start date:**	17 Oct 2012
Priority:	Normal		**Due date:**	
Assignee:			**% Done:**	0%
Category:			**Estimated time:**	0.00 hour
Target version:				

Description

See comments in http://www.opensourcebrain.org/projects/muscle_model/repository/revisions/master/entry/NeuroML2/ca_boyle.nml.

The parameters in the paper suggest this is an activation variable, and since it's very slow (tau=151ms) it will mean the channel will hardly ever open...

History

#1 - 17 Oct 2012 15:12 - Mike Vella

Padraig Gleeson wrote:

> See comments in http://www.opensourcebrain.org/projects/muscle_model/repository/revisions/master/entry/NeuroML2/ca_boyle.nml.
>
> The parameters in the paper suggest this is an activation variable, and since it's very slow (tau=151ms) it will mean the channel will hardly ever open...

In the title I think you mean "f" is activation not inactivation? I agree with you on this point. There is something very perplexing here, The activation rate would be too slow to support the kind of regular spiking we see in the data. Could this be a typo in the paper? I haven't looked at the c++ code.