

Cerebellar Granule Cell - Solinas et al. 2010 - Bug #8

GranCell_mod should match GRANULE_Cell's behaviour

06 Mar 2012 17:14 - Eugenio Piasini

Status:	Closed	Start date:	06 Mar 2012
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
We have to make sure that the neuroconstruct model which uses the mod files from the original NEURON implementation behaves exactly as the reference model. As of Revision r7, this doesn't appear to be true: I attach a comparison between the two cells obtained by simulating a simple current injection as per the test.py script at 30 deg C. !attached_image!			

History

#1 - 07 Mar 2012 00:27 - Eugenio Piasini

- File GranCellSolinasEtAl10_test_rev7_NMDALeak_noTABLEKCa.png added

Revision r8

- * Added the NMDA_Leak mechanism
- * commented out the TABLE and DEPEND lines in GRANULE_KCA.mod (in the nC project) to mimic the effect of the

```
h.usetable_GRANULE_KCA = 0
```

setting in GRANULE_Cell.py.

However, it still doesn't match: see attached graph.
!GranCellSolinasEtAl10_test_rev8_NMDALeak_noTABLEKCa.png!

#2 - 07 Mar 2012 00:29 - Eugenio Piasini

- File deleted (GranCellSolinasEtAl10_test_rev7_NMDALeak_noTABLEKCa.png)

#3 - 07 Mar 2012 00:29 - Eugenio Piasini

- File GranCellSolinasEtAl10_test_rev8_NMDALeak_noTABLEKCa.png added

#4 - 08 Mar 2012 17:10 - Sergio Solinas

- File GranuleCellSolinasEtAl10_test_r8.png added

- !GranuleCellSolinasEtAl10_test_r8.png!
- I disagree with Eugenio simulation results, in my simulations the overlap between test.py and the nC version is remarkable.

#5 - 09 Mar 2012 12:00 - Eugenio Piasini

- Status changed from New to Resolved

My bad. In my previous simulations, I had left the temperature in test.py at 37 instead of 30. I confirm that rev r8(:63ed761a1024) fixes the issue. I'm going to merge back this fix in the repo's default branch.

#6 - 09 Mar 2012 14:08 - Eugenio Piasini

- Status changed from Resolved to Closed

Files

GranCellSolinasEtAl10_test_rev7.png	66 KB	06 Mar 2012	Eugenio Piasini
GranCellSolinasEtAl10_test_rev8_NMDALeak_noTABLEKCa.png	77.2 KB	06 Mar 2012	Eugenio Piasini
GranuleCellSolinasEtAl10_test_r8.png	67.5 KB	08 Mar 2012	Sergio Solinas