[Re] A neural model of the saccade generator in the reticular formation

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A reference implementation of

→ *A neural model of the saccade generator in the reticular formation*, G. Gancarz, S. Grossberg, Neural Networks, 1159-1174, 1998

Introduction

We provide an implementation of the saccade generator (GM) model of the neural circuitry in the reticular formation underlying saccadic eye movements proposed by Gancarz & Grossberg [2]. The model forms part of (e.g. is it an important paper in the domain ?). The original implementation is not publicly available. T he implementation we propose is coded in the NEST [3] framework, one of the modern actively developed simulation platforms that is publicly available. The code uses the Python interface [1] for legibility. The model and analysis scripts are implemented using Python 2.7.12.

Methods

The methods section should explain how you replicated the original results:

- did you use paper description
- did you contact authors ?
- did you use original sources ?
- did you modify some parts ?
- etc.

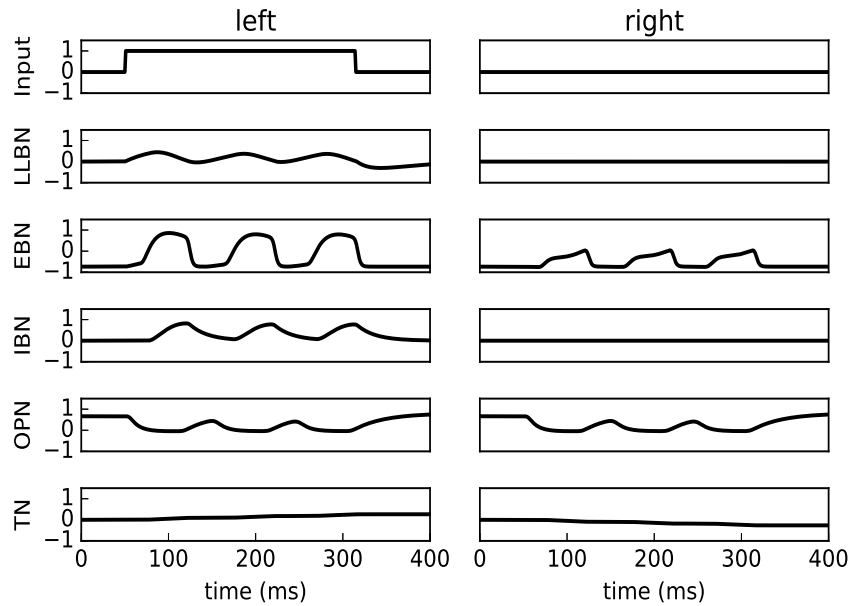If relevevant in your domain, you should also provide a new standardized description of the work.

Figure 1: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].

Results

Results should be compared with original results and you have to explain why you think they are the same or why they may differ (qualitative result vs quantitative result). Note that it is not necessary to redo all the original analysis of the results.

Saccadic staircase simulation

Bli Bla Blub

Cell activity profiles in the reticular formation

Bli Bla Blub

Visually guided saccades

Bli Bla Blub

Oblique staircase simulation

Bli Bla Blub

Tuning curve of excitatory burst neuron (EBN)

Bli Bla Blub

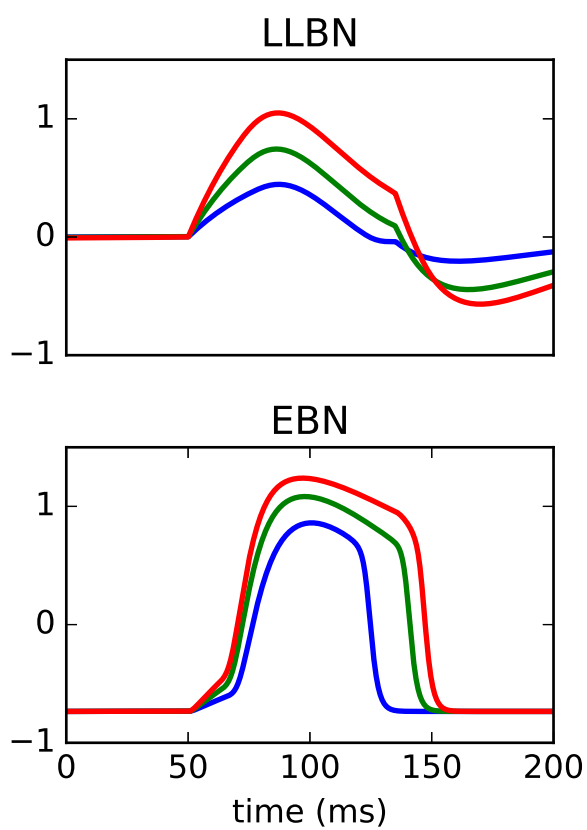### Effects of frequency of external stimulation

Bli Bla Blub

Figure 2: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
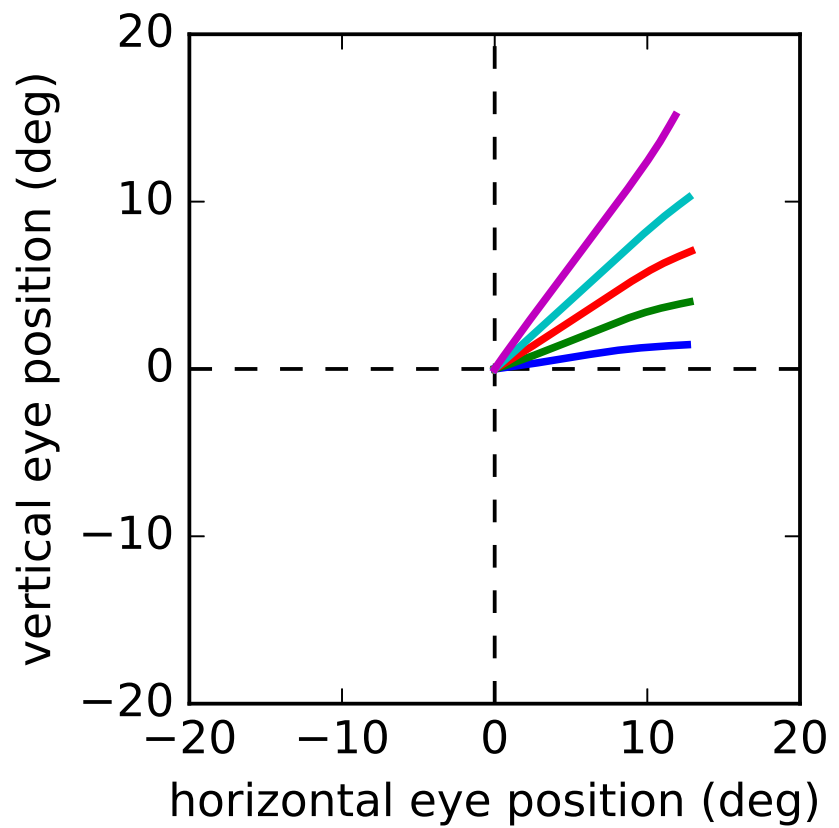
Figure 3: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
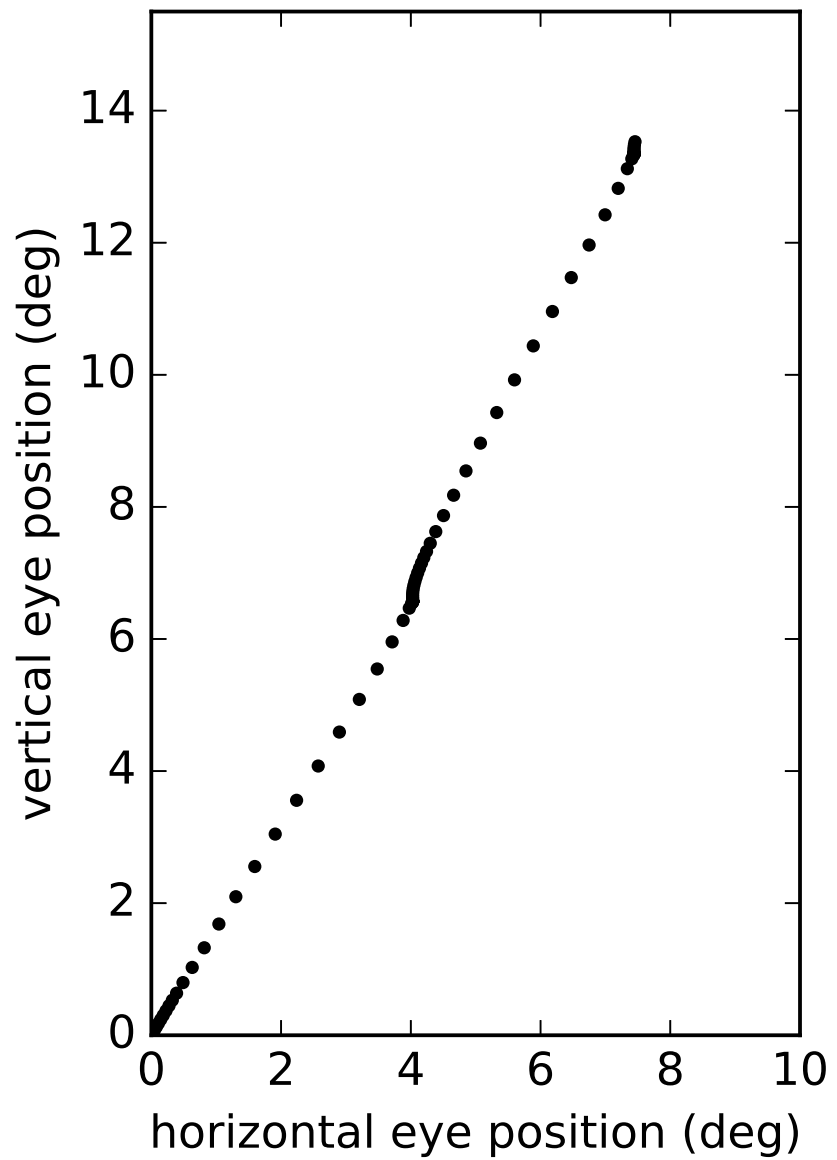
Figure 4: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
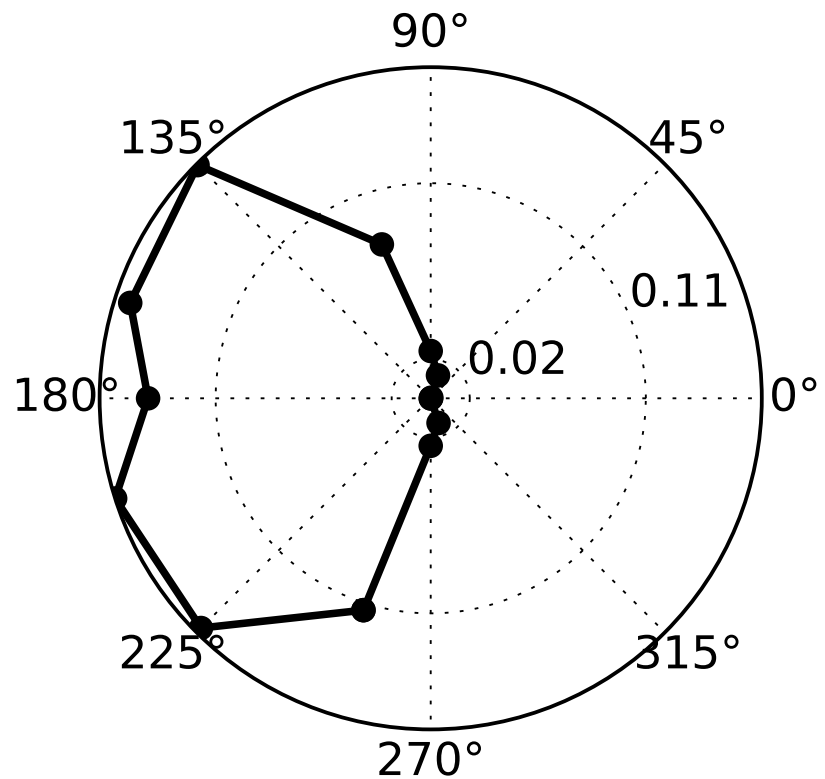
Figure 5: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
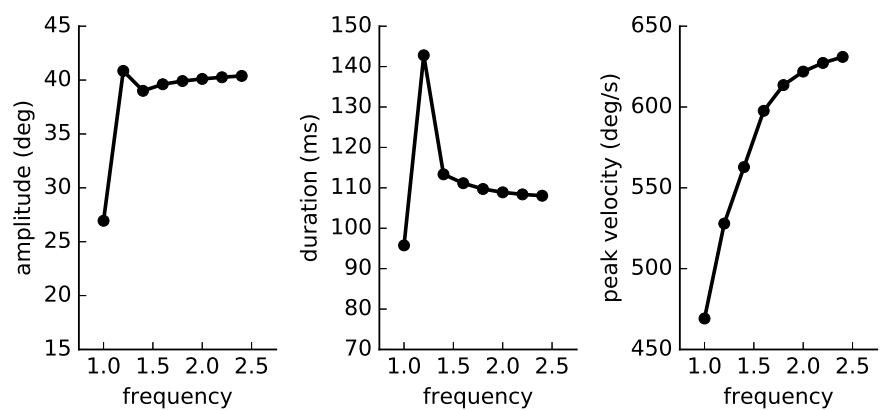

Figure 6: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].

Trading saccade velocity and duration

Bli Bla Blub

Smooth staircase simulation

Bli Bla Blub

Interrupted saccade simulation

Bli Bla Blub

Conclusion

Conclusion, at the very minimum, should indicate very clearly if you were able to replicate original results. If it was not possible but you found the reason why (error in the original results), you should exlain it.

Table 1: Table caption {#tbl:table}

Heading 1			Heading 2		
cell1 row1	cell2 row 1	cell3 row 1	cell4 row 1	cell5 row 1	cell6 row 1
cell1 row2	cell2 row 2	cell3 row 2	cell4 row 2	cell5 row 2	cell6 row 2
cell1 row3	cell2 row 3	cell3 row 3	cell4 row 3	cell5 row 3	cell6 row 3

A reference to table **tbl:table**. A reference to figure **fig:logo**. A reference to equation **eq:1**. A reference to citation **markdown**.

$$A = \sqrt{\frac{B}{C}}$$

{#eq:1}

Acknowledgments

All network simulations carried out with NEST (http://www.nest-simulator.org).

References

[1] Jochen M Eppler. "PyNEST: A convenient interface to the NEST simulator". In: *Frontiers in Neuroinformatics* 2 (2008). ISSN: 16625196. DOI: 10.3389/neuro.11.012.2008. URL: http://journal.frontiersin.org/article/10.3389/neuro.11.012.2008/abstract.

[2] Gregory Gancarz and Stephen Grossberg. "A neural model of the saccade generator in the reticular formation". In: *Neural Networks* 11.7 (1998), pp. 1159–1174. ISSN: 08936080. DOI: 10.1016/S0893-6080(98)00096-3.

[3] Marc-Oliver Gewaltig and Markus Diesmann. "NEST (NEural Simulation Tool)". In: *Scholarpedia* 2.4 (2007), p. 1430. ISSN: 1941-6016. DOI: 10.4249/scholarpedia.1430. URL: http://www.scholarpedia.org/article/NEST%7B%5C_%7D%7B%%7D28NEural%7B%5C_%7DSimulation%7B%5C_%7DTool%7B%%7D29.
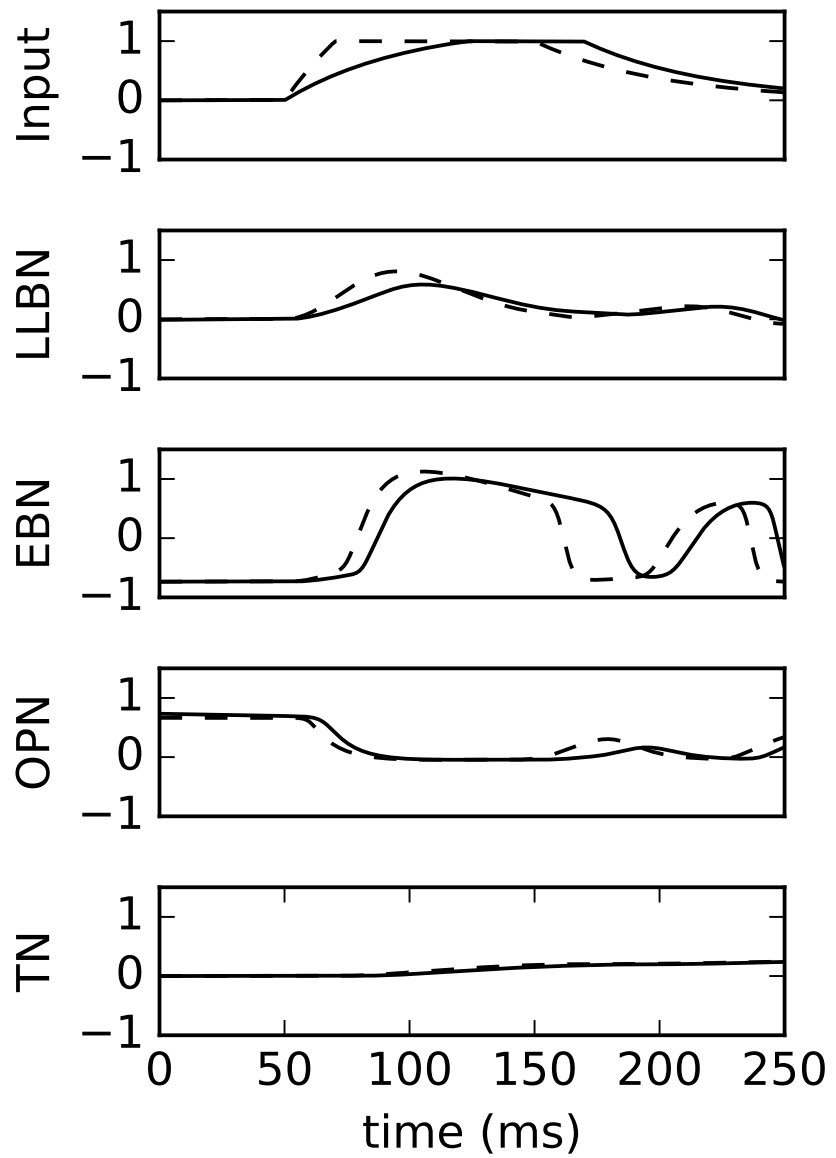
Figure 7: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
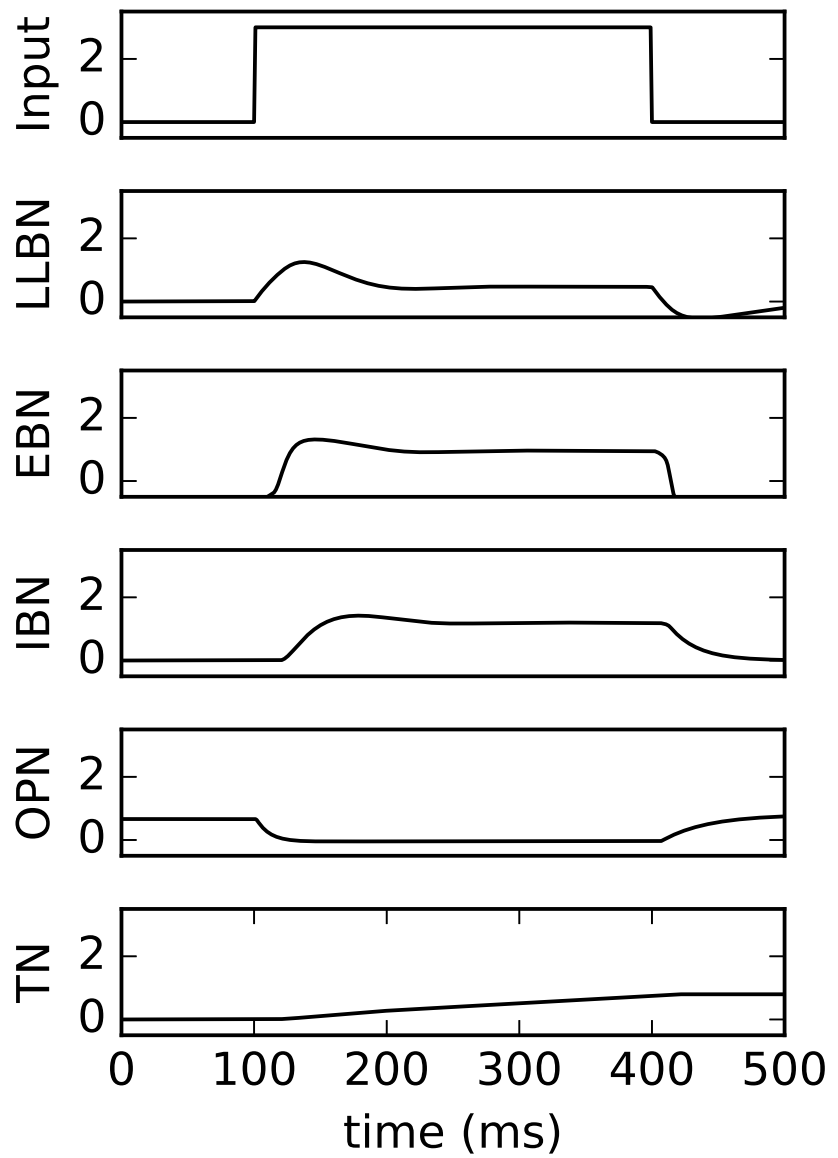
Figure 8: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].
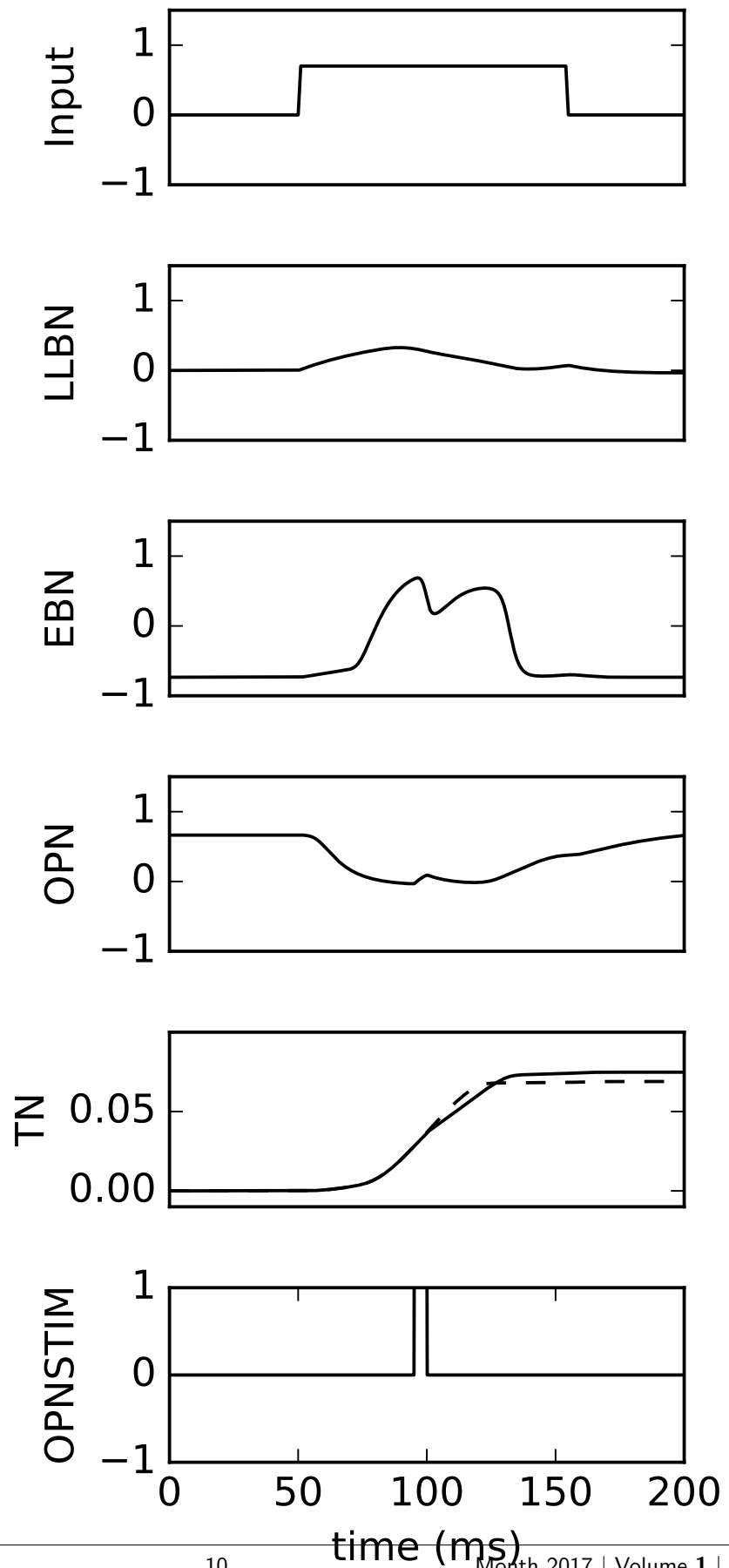
Figure 9: Figure caption for part (A) and part (B) . Description of stuff happening in the original implementation of Gancarz & Grossberg [2].

Figure 10: Figure caption