**Reviewer's report**

**Title:**A data repository and analysis framework for spontaneous neural activity recordings in developing retina

**Version:**1**Date:**6 November 2013

**Reviewer:**Christophe Pouzat

**Reviewer's report:**

General Comments

This manuscript, written in a "modest" style, is built upon a genuinely impressive work. The authors address very important questions in retinal development: i) the reproducibility of published space constants of ganglion cells (cross-)correlations during retinal waves; ii) the factors (neurotransmitters) influencing these correlations. The authors' approach is very original since they first convinced several leading labs in this field to share---hat off for succeeding!---their (almost) raw data. (I write "almost raw" since the genuine raw data are continuous recordings of extracellular potential from the high number of electrodes making a multi-electrode array; the data the authors got are the spike trains extracted from the raw data using spike sorting procedures.) With these data the authors prepared a curated data base and made it available to all on the CARMEN repository. Anyone who organised, in a clean and coherent way, his own data knows that it takes time and abnegation; doing this work with data from many different laboratories is all the more impressive and constitute a tremendous service to the community. The authors could then analyse the data in a uniform way. Their purpose was not to introduce new analysis methods but to implement what is commonly done in the field. They did that using the free data analysis environment R. They implemented, moreover, the "reproducible research" paradigm, giving me access to their codes as well as to a precise description of how the code was applied to the data. What a pleasure, for a referee, to regenerate a figure on his computer and check that it is exactly the same as the one of the manuscript! To my knowledge, this manuscript is the first study of that scale in neuroscience that implements this paradigm, and I'm happy to testify that I could reproduce the full analysis presented in the manuscript.

To summarise, this manuscript clarifies and strongly reinforce key findings in developmental neuroscience. It achieves this goal through the development of a publicly available data base and by implementing thoroughly the reproducible research paradigm. In that it will be of interest for a much wider community than the developmental neuroscience one. A lot of work was obviously required by this project and even more work was saved for the coming authors' followers. The manuscript is clearly written and, for the first time in my reviewer's career, I'm disappointed not to see some of the superlatives so typical of American English prose, they would have been well deserved.

Major Compulsory Revisions

None

Minor Essential Revisions

None

Discretionary Revisions

See the attached PDF file. This is more directed to the editor to illustrate what referees and readers can do when given access to the data and code used in a manuscript.

Christophe Pouzat

**Level of interest:**An article of outstanding merit and interest in its field

**Quality of written English:**Acceptable

**Statistical review:**No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests