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| **What is being discussed?** | **Reference** |
| Introduction | |
| *Broad context*  Neurobiological models are used to study synchronous activity which resembles activity of the cortex found in vivo.  There are numerous model types, each with advantages and disadvantages. For examining the activity of large networks, simple neuron models are preferred. Moreover, for the examination of cortical activity a recurrent network is used.  One model is the balanced random network, which is frequently used to study dynamics of large-scale sparsely-connected networks. |  |
| *Social relevance*  Perhaps something about maintaining balance to prevent epilepsy. But not too much about social relevance. Quite a fundamental study. |  |
| *Former research*  The balanced network is examined extensively and four states are classified based on synchrony and regularity. The state of a network is mostly based on the amount of external input and the ratio of the conductance of inhibitory and excitatory neurons.  A balanced state is also reached with a network with neurons containing properties more realistic. These neurons contain an differential equation for their conductance as well. | (Brunel & Brunel 2000)  (Yger & Harris 2013) |
| *Scientific relevance*  However, it is not examined whether this type of networks can reach the other states as mentioned in (Brunel & Brunel 2000). Moreover, it is unknown whether the transitions between several states are similar or if the behavior is different. |  |
| *Research question*  It is examined whether the more realistic neuron model can reach different balanced network states and what parameters influence the state transitions and in which manner. |  |
| *Hypothesis*  Blanced state with different states can be reached. |  |
| *Research approach*  As a huge parameter space is faced, simulations of all parameter would not be doable in the given amount of time. So the paper of (Yger & Harris 2013) is used as begin point and it is tried to reach a balanced state. From there on simulations are performed to explore what the influence is of changing parameter values. |  |
| *Expectations*  Expected is that exploration simulation will reveal interesting ranges to resume simulations for more detailed analyses. |  |
| Methods | |
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| Results | |
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| Discussion | |
| *Summary of results & conclusion* |  |
| *Evaluation and explanation results* |  |
| *Feedback to former results* |  |
| *Feedback to broad context & social relevance* |  |
| *Suggestions for future studies* |  |
| *Final conclusion* |  |