**SUMMARY**

**Aim:** Computational models of the observed circuits/synaptic connections could help to understand the organization of the BLA network and sub-cellular mechanism to generate SWs. Mechanisms that generate temporal dynamics of synaptic events observed during BLA SWs.

**Observations:**

* During SWs, interneurons receive stereotypical high frequency (200 Hz) glutamatergic excitation, whereas principal neurons received compound GABAergic inputs.
* Excitatory action by Chandelier on the principal neuron AIS activate a di-synaptic feedback excitation in the BLA.
* BLA SWs occurred as a reverberating multi-synaptic feedback glutamatergic excitation. (Fig: 2A)
* Reverberations occurred as high frequency excitatory inward currents (200 Hz) time-locked at regular intervals (4 ms). (Fig 2B, C, E) and increased to maximum within 10-30 ms.(Fig 2F)
* During reverberation, the glutamatergic inward current amplitude increased may-fold from the first di-synaptic event and lasted about 50ms. It shows reverberating activity recruits many principal neurons at regular time-intervals to synchronize in a specific time-window.
* The reverberating excitation occurred as feedback excitation in the initiating Chn and recruited other interneurons through feedforward excitation.
* Principal neurons had large monosynaptic connections on interneurons including Chns to facilitate high fidelity recruitments during reverberations. No somatic spikes.

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