**Neural network of HH neurons with synaptic connections**

**Single neuron dynamics**

(1)

**Synaptic current**

(2)

Refractory period: spikes do not propagate after one spike until is reached

**External input**

**Connectivity**

N – number of neurons

sp – spikes in the spike train

**Indexes**

k – index over neurons

i – index over synapses

j – index over spikes

Summation over synaptic connections is organised by sparse connectivity matrix **A**