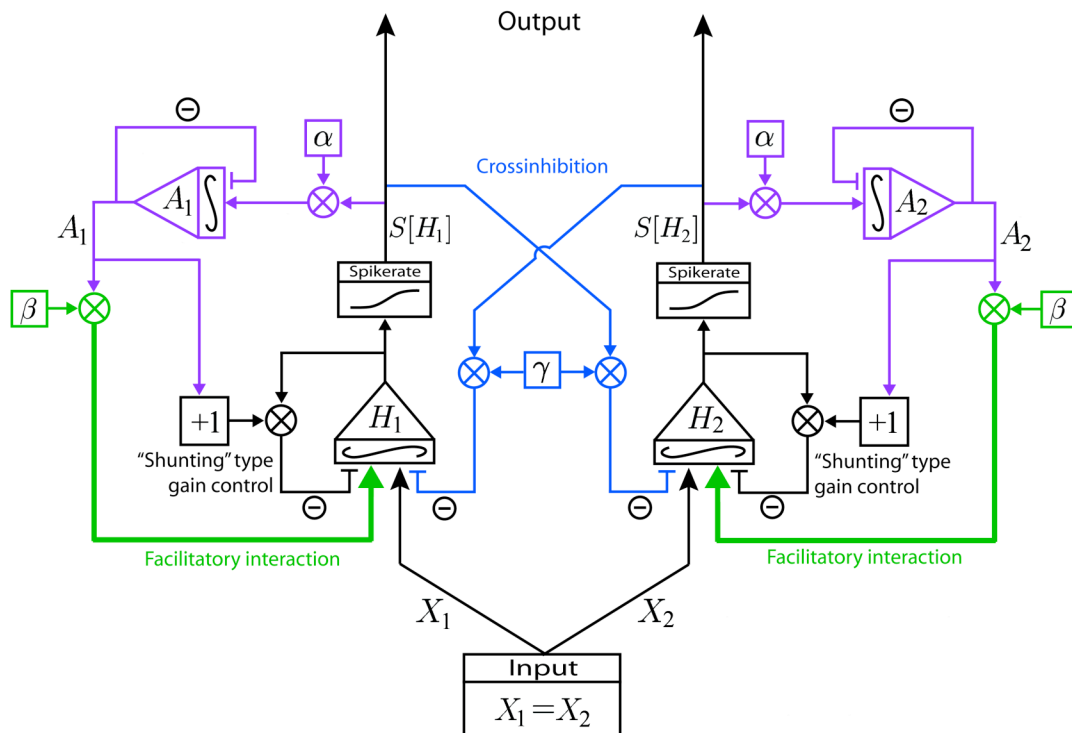


SCHEME 1



Schematic representation of one class of neural interpretations of the model. This example is the direct translation of equations 1 and 2. The membrane potentials (H_1 and H_2) of two neural populations that encode a pair of competing percept are driven by inputs (X_i) that represent a rivalrous or ambiguous stimulus, hence ($X_1=X_2$). Each membrane potential determines its spike rate output via a sigmoidal function (S). Three other signals determine the membrane potential dynamics. First, in blue, the two neural pools cross-inhibit each other ($\gamma S[H_i]$) creating bistability. Second, the membrane potentials have shunting-type gain control (black) controlled by the level of adaptation (purple), the leaky-integral of the neural output. Third, in green, there is a small facilitatory contribution (βA_i) that also derives from the adaptation mechanism. Note that the black and blue parts have a fast response (< 0.1 s), while the green and purple parts are slow (seconds).

This scheme is implemented in the MatLab/Simulink file “scheme_1.mdl”. The pre-set values of the input stimulus is $T_{on} = 1$ s, and $T_{off} = 2$ s which results in repetition of signals only at one output channel. (In Simulink: ‘stimulus’ Period = 3s, and Pulse Width = 33%). If the input is set to shorter T_{off} , the signals alternate between the two output channels, for instance $T_{on} = 1$ s, and $T_{off} = 0.25$ s (In Simulink: ‘stimulus’ Period = 1.25s, and Pulse Width = 80%).