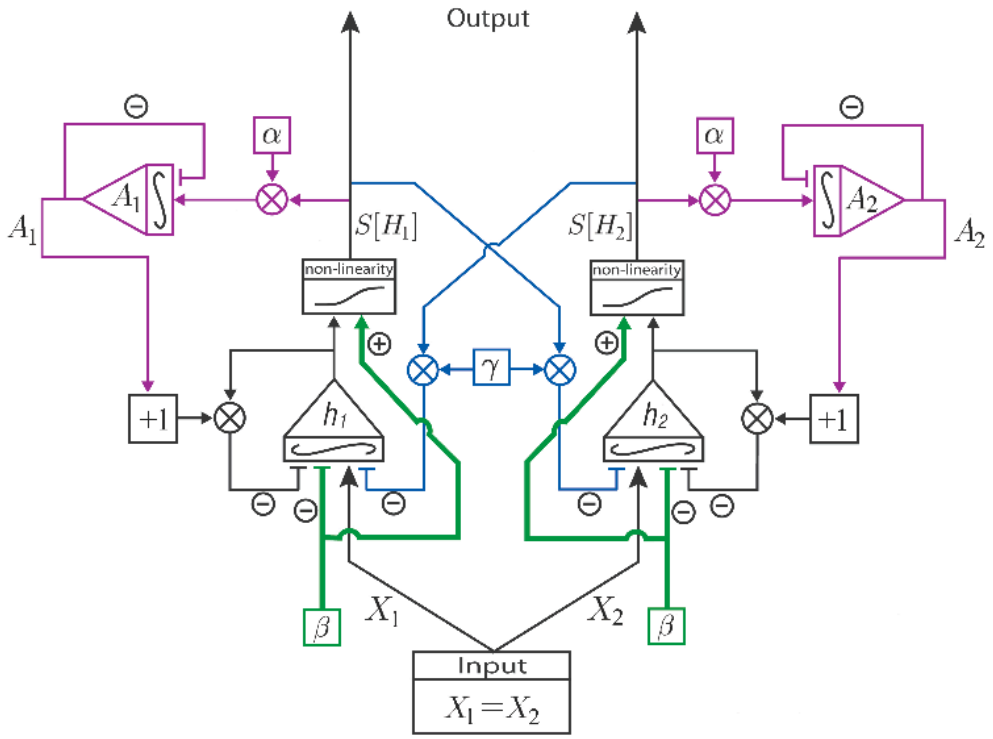
SCHEME 2



Schematic representation of one class of neural interpretations of the model. This example is the direct translation of equations 3 and 4. 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 ($S[H_i]$=$S[h_i$+ ß]). 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 fixed neural baseline (ß). Note that the black and blue parts have a fast response (<0.1s), while the purple parts is slow (seconds).
This scheme is implemented in the MatLab/Simulink file "scheme_2.mdl". The pre-set values of the input stimulus is T_{on} = 1s, and T_{off} = 2s 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} = 1s, and T_{off} = 0.25s (In Simulink: 'stimulus' Period = 1.25s, and Pulse Width = 80%).