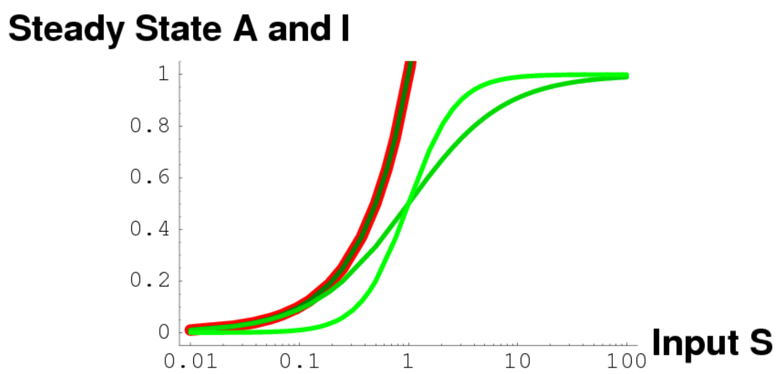

Figure 1: Steady state activator, nonconserved (dark green), saturating (green), sigmoidal (lime) and steady state, nonconserved inhibitor (red).

Saturating Activator

$$a'[t] = \frac{S^n}{Km^n + S^n} - a(t) \tag{1}$$
$$i'(t) = \alpha * (S - i(t)) \tag{2}$$
$$r'(t) = \beta * (a(t)(R_{tot} - r(t)) - i(t)r(t)) \tag{3}$$

- for $Km \ll S$, it's the original LEGI model
- for $Km \approx S$ and $n = 1$, saturated activator
- for $Km \approx S$ and $n > 1$, sigmoidal activator

the "stopping point" - point in the gradient when attraction becomes repulsion

neuronal migration based on a local model

Mechanical model fig. 5

Kelvin-Voigt elements

$$s_i = L * \frac{i-1}{n-1} \tag{4}$$
$$x_i(0) = s_i \tag{5}$$
$$x_i'(0) = 0 \tag{6}$$
$$m * x_i''(t) = k_a(s_i - x_i(t)) - \eta_m * x_i'(t) + Fm_i(t) + Fm_{i-1}(t) \tag{7}$$
$$Fm_i(t) = k_m \left(\frac{x_{i+1}(t) - x_i(t)}{dL} - 1 \right) - \eta_m \left(x_i(t) - x_{i+1}(t) \right) \tag{8}$$

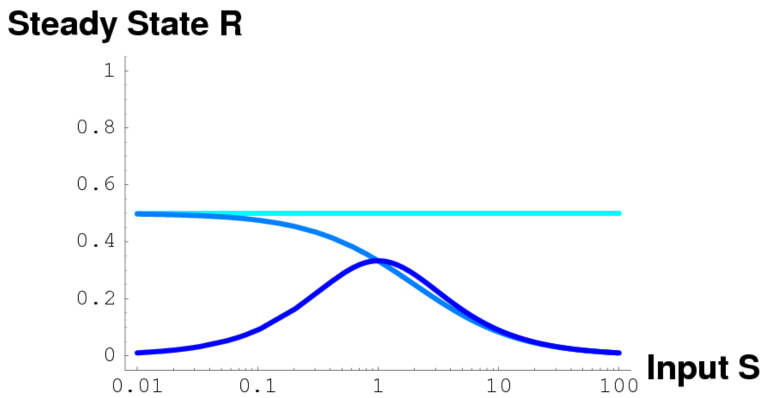

Figure 2: Steady state response for LEGI (cyan), saturating activator (blue), sigmoidal activator (navy)

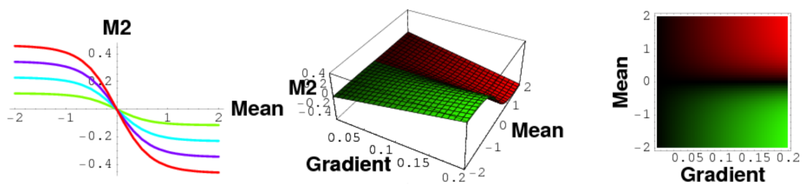

Figure 3: Metric

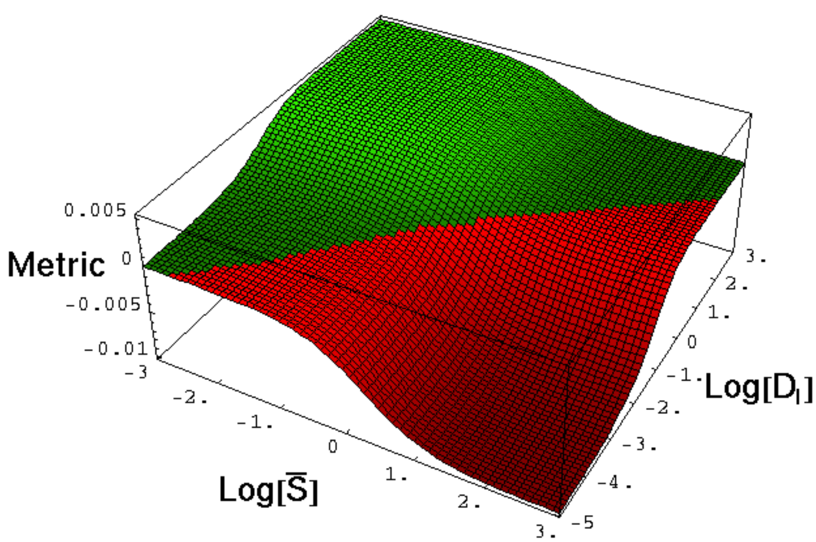

Figure 4: Metric

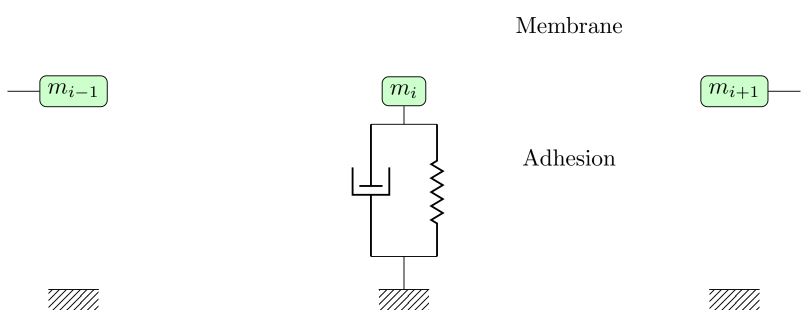

Figure 5: Membrane model