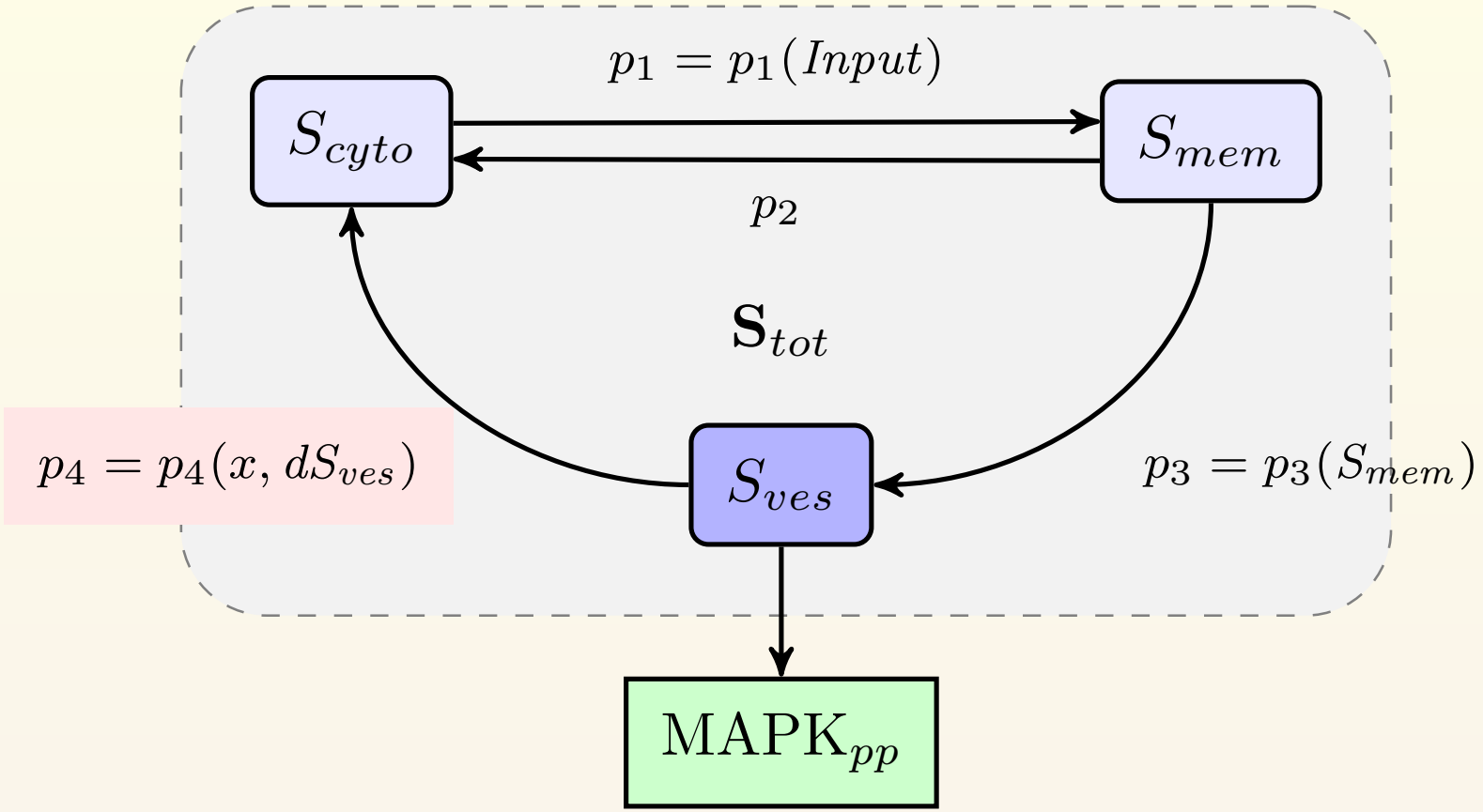
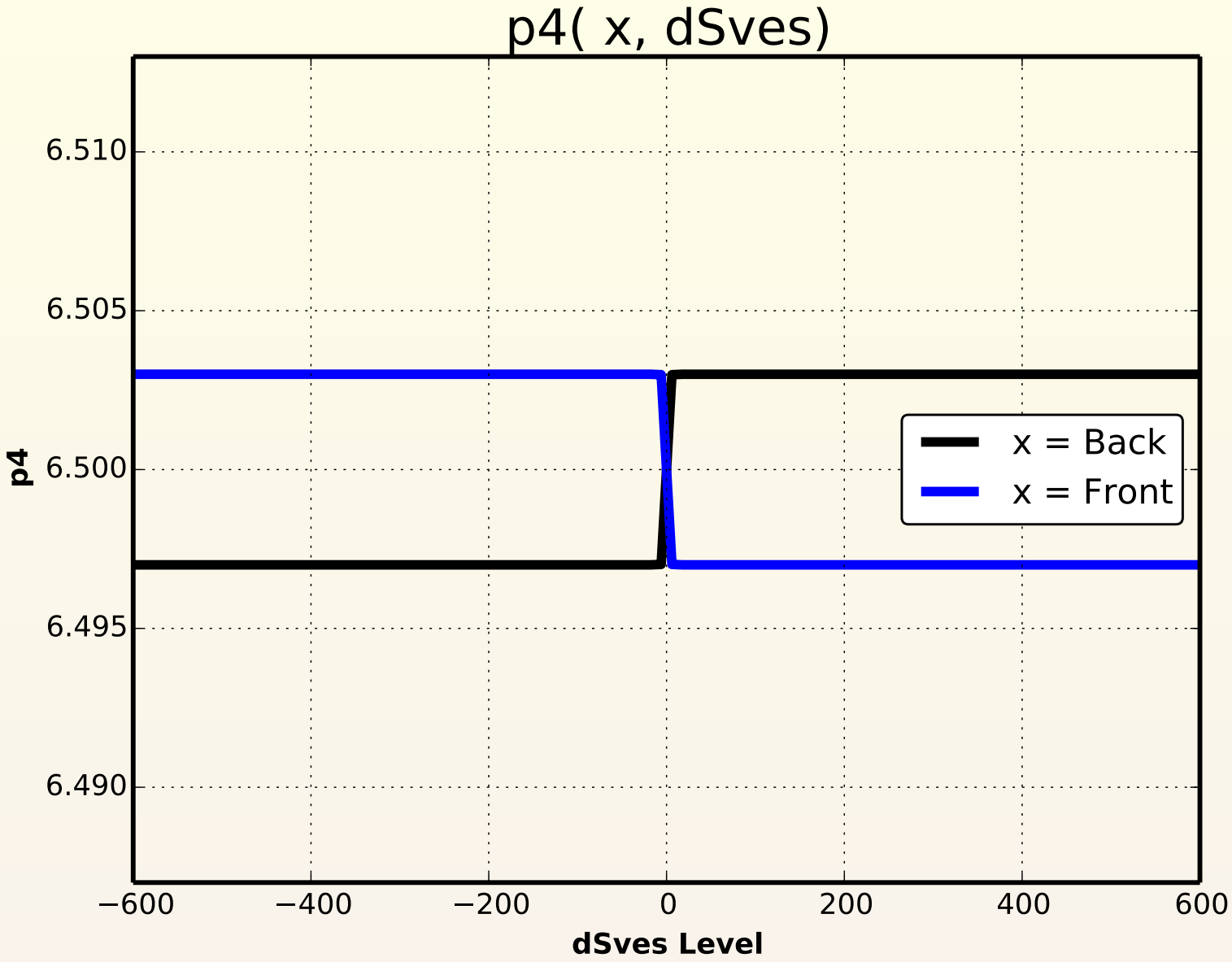
Model Schematic



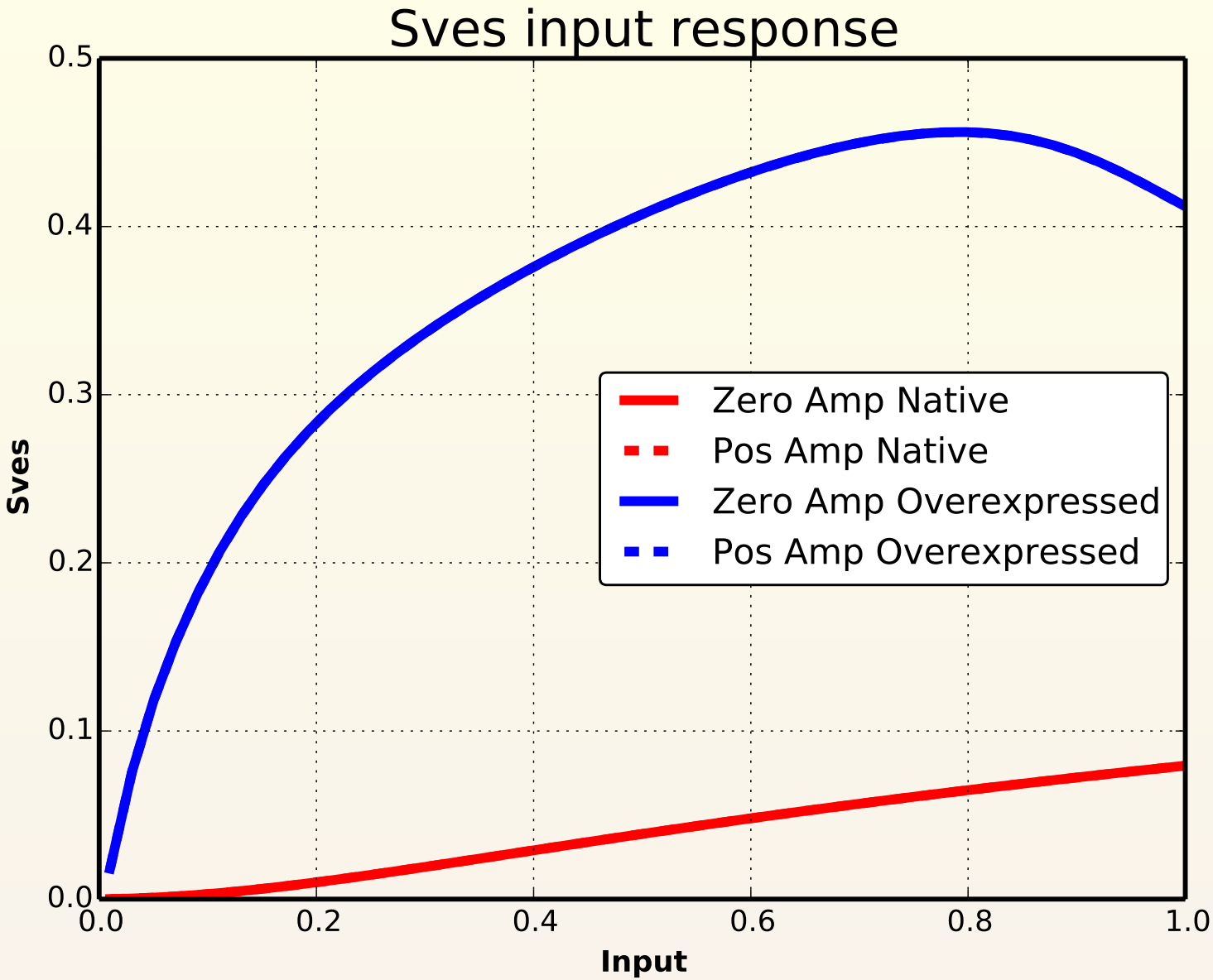
Sves inhibits Rab11 localization

- p4(dSves) aka Rab11 needs to be a function of the difference between vescile scaffold in the front from the back
- $dSves = Sves_{front} - Sves_{back}$
- in other words, vescile scaffold and Rab11 are mutually inhibitory
- Since native dSves is small, need fast p4 switching to amplify native MI
- Need slow p4 switching for the OE case in order to prevent positive feedback locking, otherwise you wont see the chemorepulsion to attraction transition

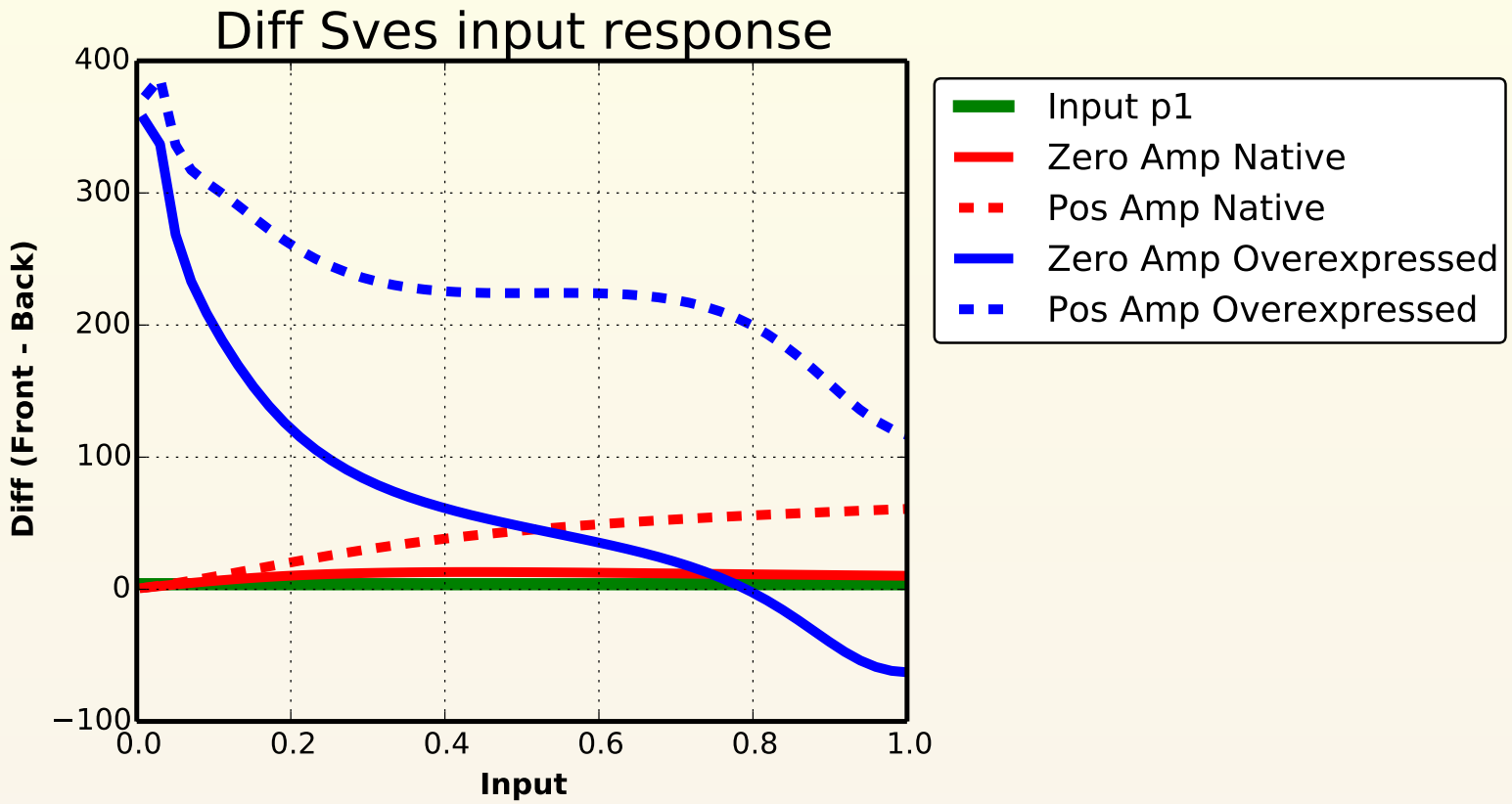
Fast p4 switching



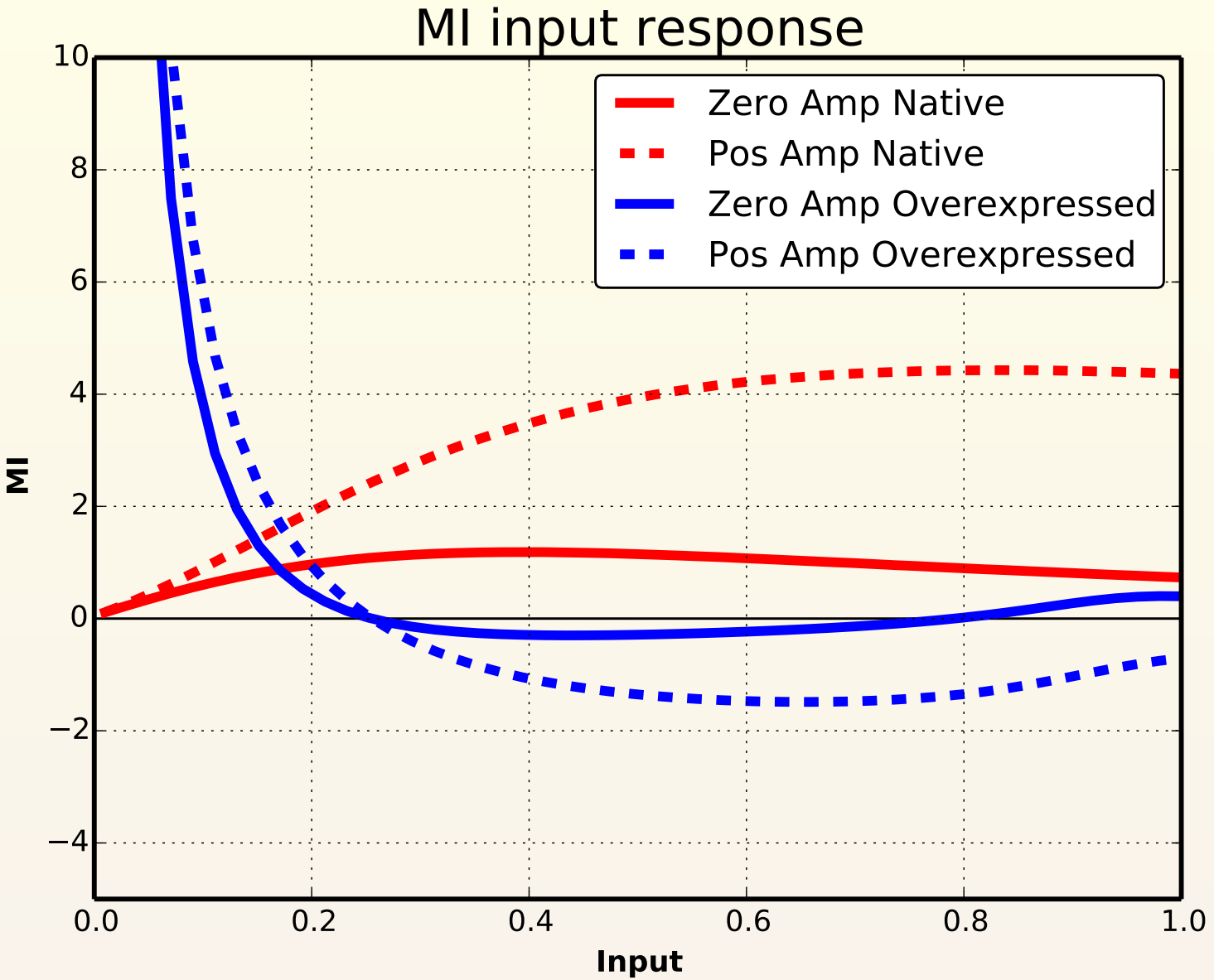
Fast p4 switching



Fast p4 switching



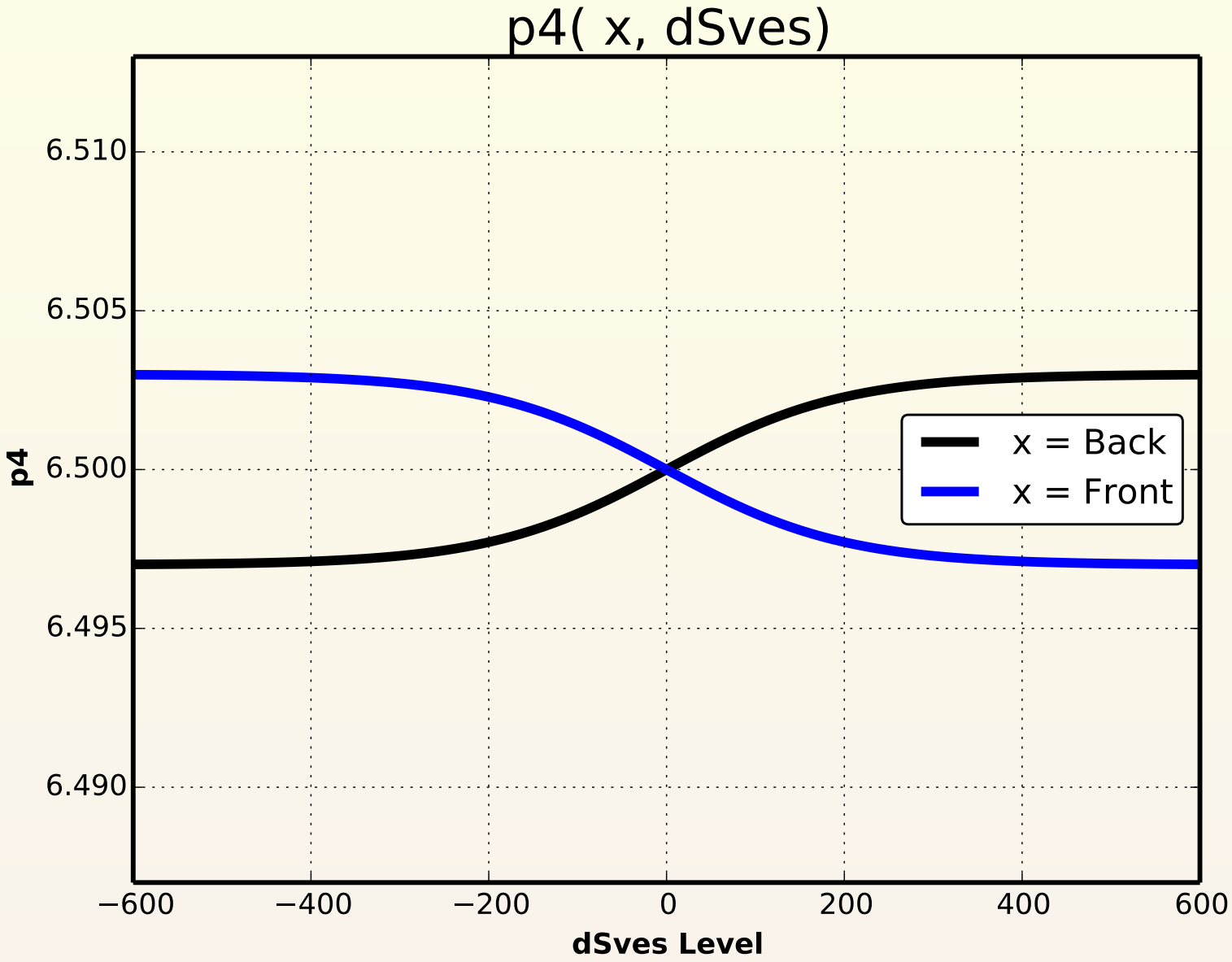
Fast p4 switching



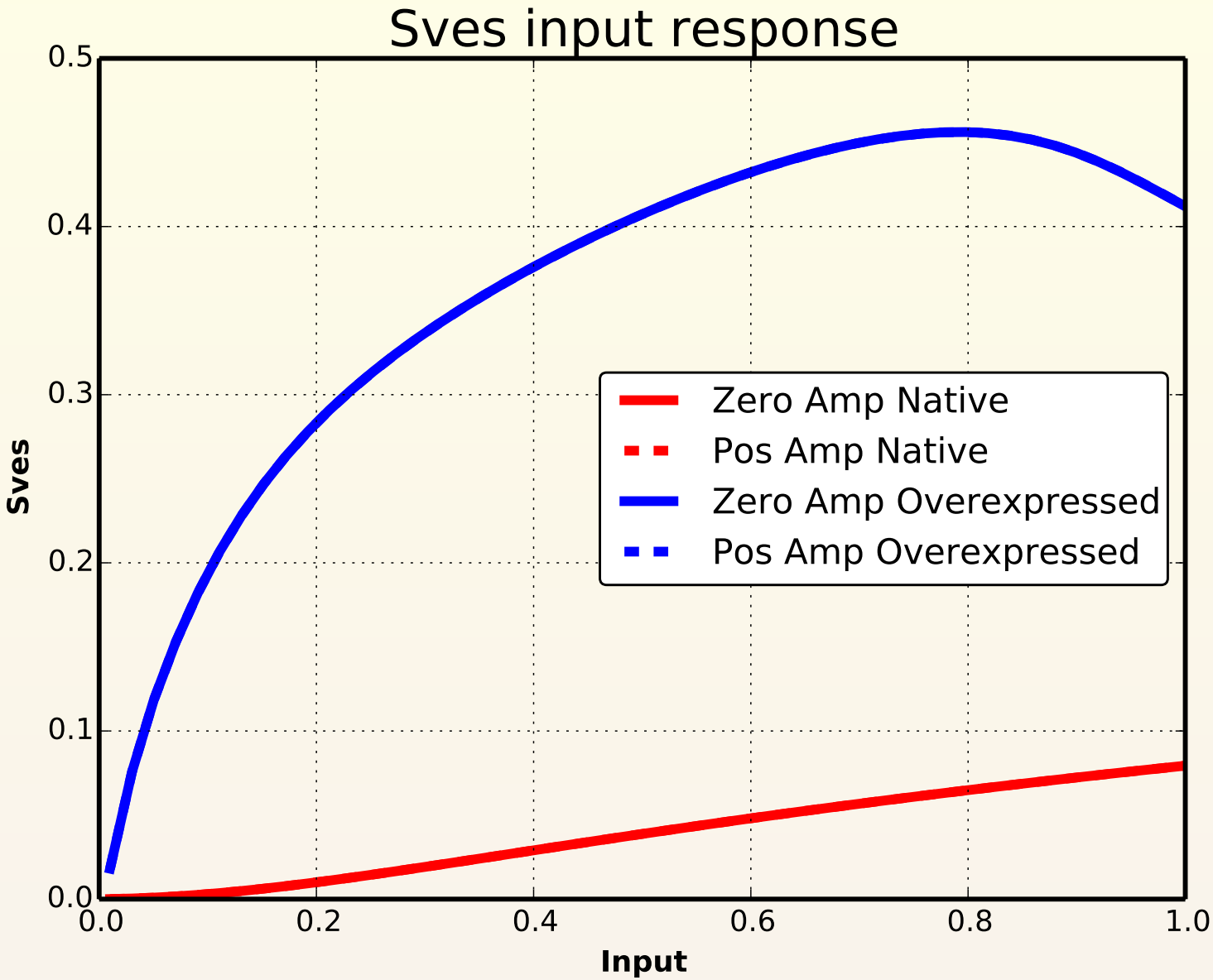
Fast p4 switching

- we get a boost in native MI but no positive MI at high dose overexpressed cells
- but if we reduce the sigmoidal transition w.r.t. dSves, we can amplify at OE levels at the expense of the native case

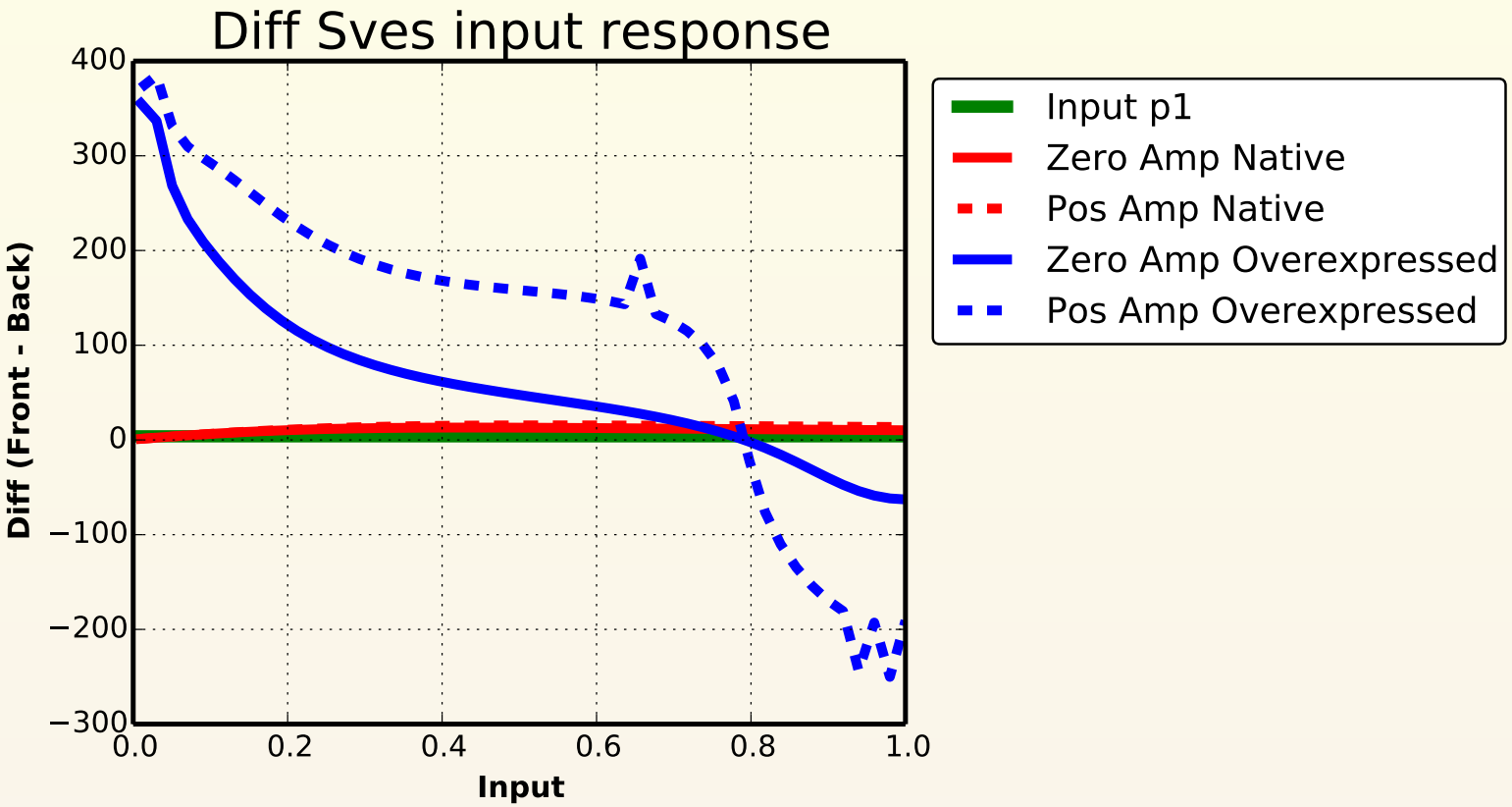
Slow p4 switching



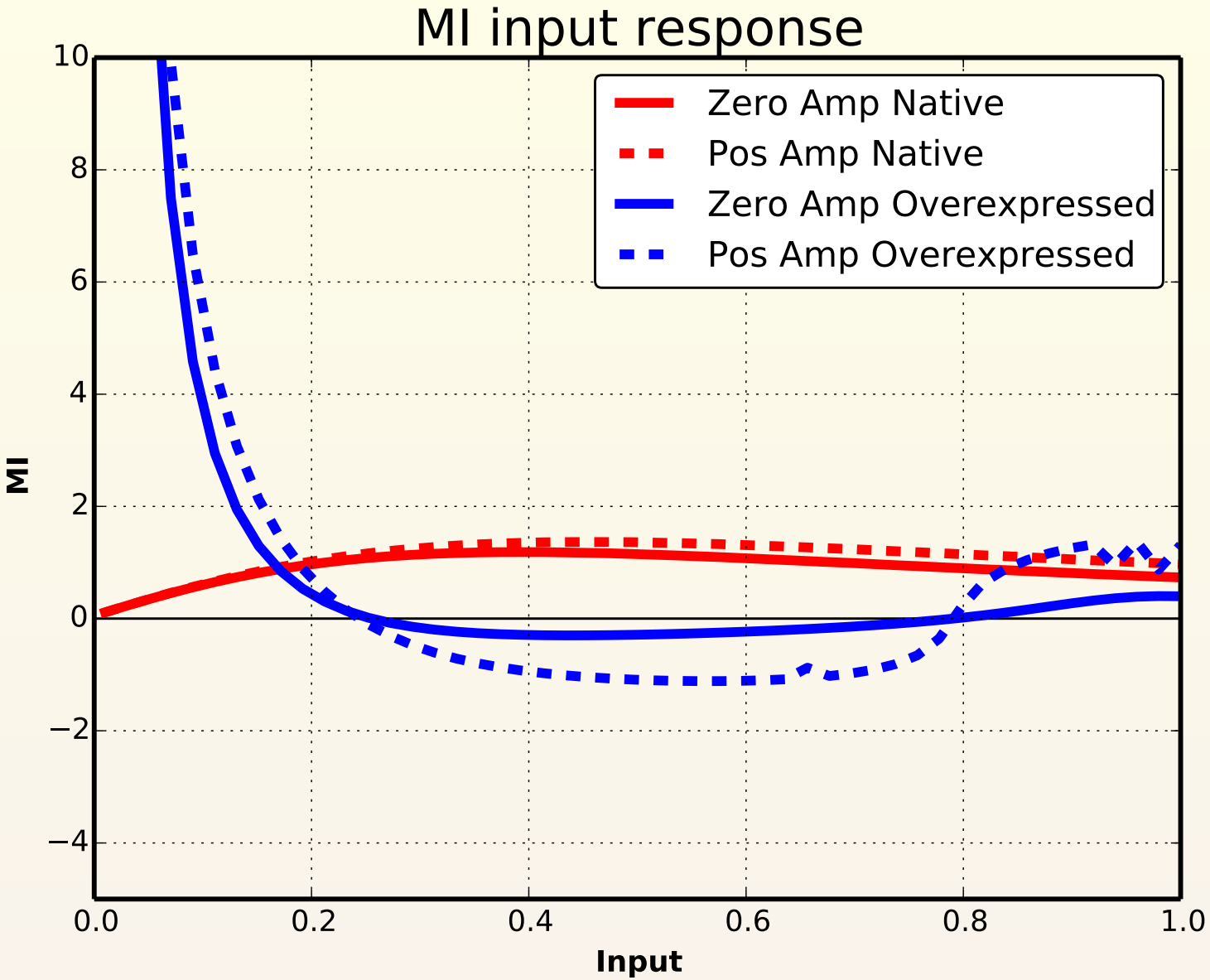
Slow p4 switching



Slow p4 switching



Slow p4 switching



Sves inhibits Rab11 localization

- I feel like we can almost get both cases to work
- We have a single model that can amplify in the native case and in the OE case, just with just a signle parameter change
- Another way to interpret this is that vesicle scaffold inhibits Rab11 translocation AND reduces its kinetics