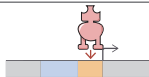


# ARCHITECTURE

# EFFECTIVE STATES

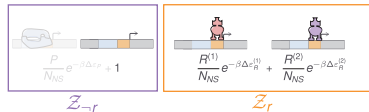
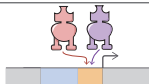
# EFFECTIVE FREE ENERGY

simple repression



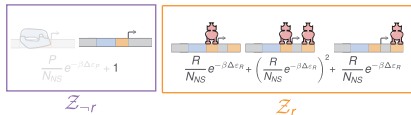
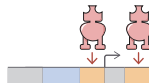
$$-k_B T (\log \mathcal{Z}_r - \log \mathcal{Z}_{-r})$$

competitive repression



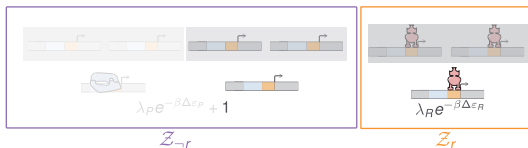
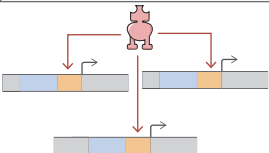
$$-k_B T (\log \mathcal{Z}_r - \log \mathcal{Z}_{-r})$$

dual repression



$$-k_B T (\log \mathcal{Z}_r - \log \mathcal{Z}_{-r})$$

simple repression with multiple gene copies



$$-k_B T (\log \mathcal{Z}_r - \log \mathcal{Z}_{-r})$$