

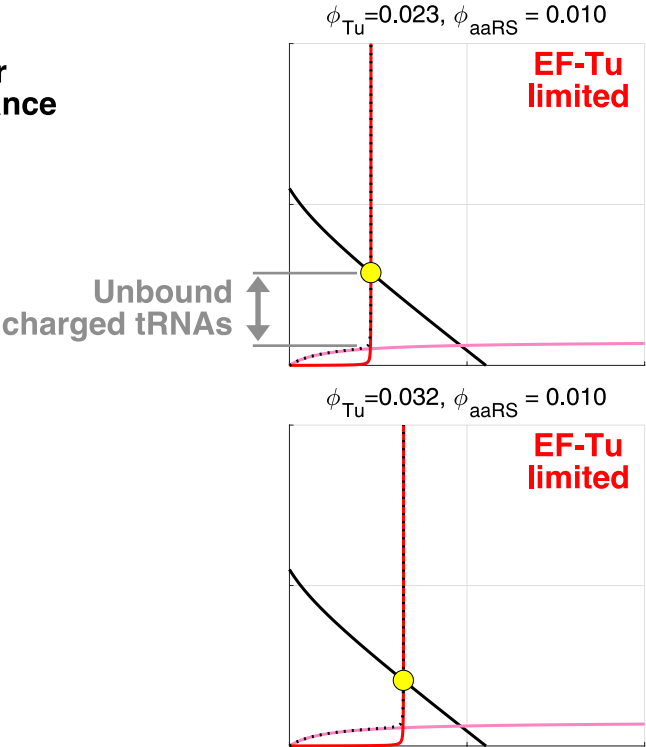
$$(t-1) \frac{\phi_{ribo}}{\ell_{ribo}} - \frac{\phi_{TC}}{\ell_{Tu}} - \frac{\lambda(\phi_{TC})}{k_{el}^{max}} = \lambda(\phi_{TC}) \left[\frac{n_{aa}}{k_{on}^{aaRS} \phi_{aaRS}} + \frac{1}{k_{on}^{Tu} (\phi_{Tu} - \phi_{TC})} \right]$$

tRNA budget
ternary complex
A-site tRNA

$\frac{n_{aa}}{k_{on}^{aaRS} \phi_{aaRS}}$
uncharged tRNA

$\frac{1}{k_{on}^{Tu} (\phi_{Tu} - \phi_{TC})}$
free charged tRNA

Steady-state solution for ternary complex abundance



Increasing aaRS abundance

Increasing EF-Tu abundance

