known molecular components and interactions

Model 1 (initial)
- reversible transducer methylation
- activating methyl. site
- no coupling of R-TWA complexes

Model 2
- antagonistic methyl. sites
- linear demethyl. rates

Model 2Bp
- CheB-phospho.
- increased demethyl. by phospho. CheB

Model 3
- quadratic/ nonlinear demethyl. rates

Model 3B fbm4
- CheB-phospho.
- increased demethyl. by phospho. CheB
- cooperativity of transducers/CheB/CheBp in demethyl.

Model 3B fbm5
- CheB-phospho.
- increased demethyl. by phospho. CheB
- cooperativity of transducers/CheB/CheBp in demethyl.

Model 3Y fbm1
- CheY/CheYp-based feedback on demethyl.

Model 3Y fbm2
- CheY-based feedback on demethyl.

Model 3Y fbm3
- CheYp-based feedback on demethyl.

Model 4
- two populations of R-TWA complexes with different stimulus specifity
- coupling of R-TWA complexes by CheY

Model 4Bp
- CheB-phospho.
- increased demethyl. by phospho. CheB
- coupling of R-TWA complexes by CheB

Model 5
- conformation-coupled R-TWA complexes with different stimulus specifity

Model 6 (final)
- radio-labeling and methanol release kinetics of flow assay
- fitted to quantitative exp. data

reproducing quantitative experimental data

experimental observations
adaptation of wildtype
MetOH-pattern of wildtype
MetOH-pattern of cheY-deletion mutant
adaptation of cells with methyl.-deficient HtrI
quantitative data