

Controlling microbial co-culture populations based on substrate pulsing can lead to stability through differential fitness advantages.

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Supplementary File 5: Nomenclature

S	Substrate
GLU	Glucose
ACE	Acetate
ETH	Ethanol
Ψ	Virtual enzyme
X	Biomass
Ψ_{σ}	Virtual enzyme related to the S consumption
r_{σ}	Consumption rate of S
A to N	Metabolites
a to n	Subindex referring to the Metabolites A to N
α to η	Subindex referring to the Metabolites A to N as substrates
M	Extracellular metabolite pool
Y	Yields
ε^c	Constitutive enzyme expression rate
ε^i	Inducible enzyme expression rate
δ	Enzymatic degradation rate
μ	Growth rate
K	Monod-type affinity constant
q_{σ}	Consumption rate constant of S
$\Psi_{\sigma_{rel}}$	Relative enzyme concentration

H_{σ}	Monod-type hill function for uptake rate of S
Φ	Global metabolic state
u	Cybernetic variables regulating expression
v	Cybernetic variables regulating activity
P	Physiological behaviour on the cultivation conditions
D	Dilution rate
w	Frequency of pulsing
s	Time fraction for feed pulse