

Figures and Tables

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Question 1

Table 1: Model fitting results and goodness-of-fit statistics.

Model	Params	R^2	χ^2	χ^2_{red}
Ping-Pong	[1, 0.1, 0.1]	1.0	1.24×10^{-25}	4.19×10^{-28}
Sequential type 1b	[1, 0.1, 0.1, 2.06×10^{-8}]	0.99	4.56×10^{-10}	1.54×10^{-12}
Sequential type 1a	[0.79, 0.03, 0.60]	0.81	1.43×10^5	4.81×10^2

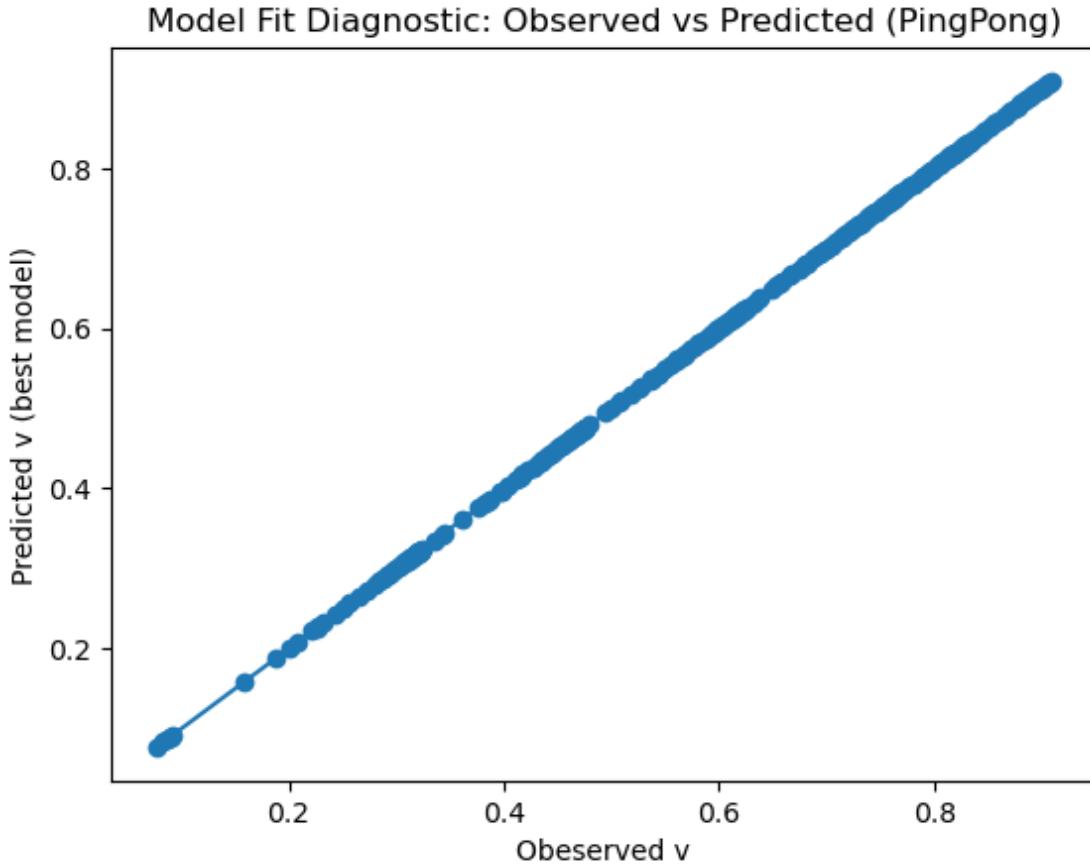


Figure 1: Model fit diagnostic: observed v.s. predicted (PingPong)

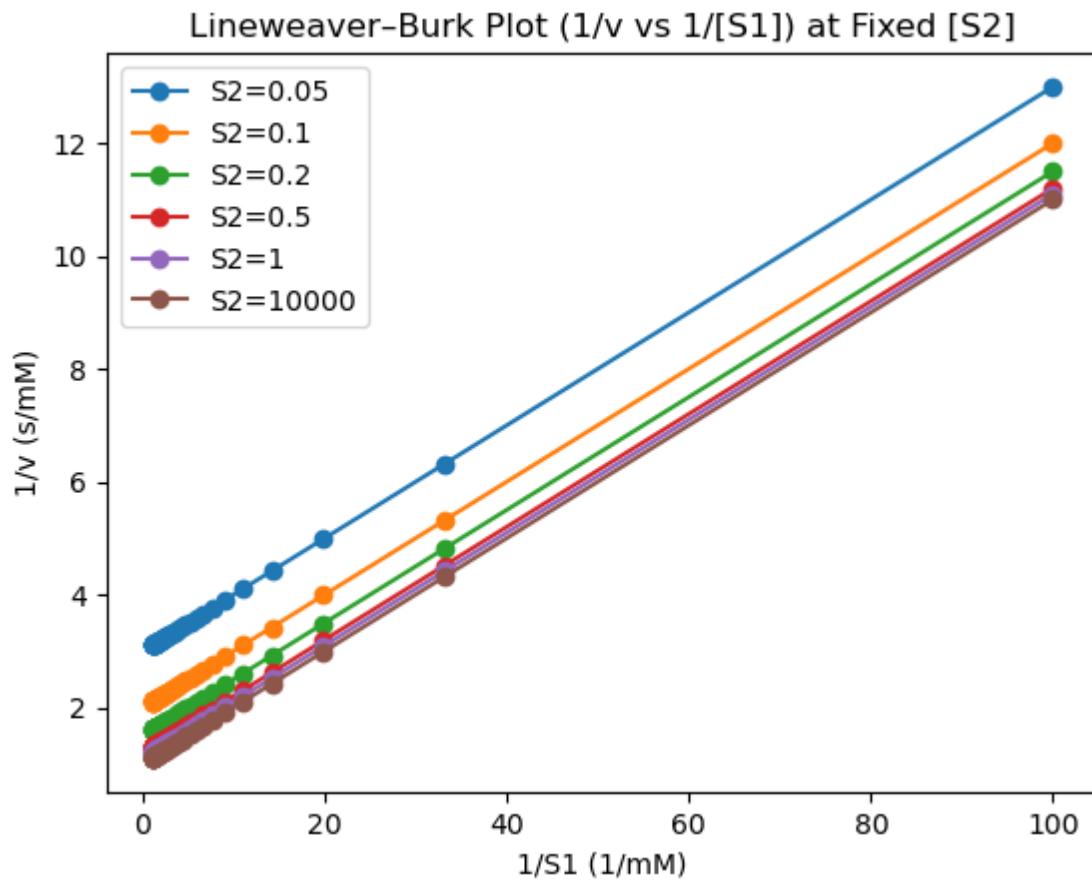


Figure 2: Lineweaver–Burk Plot ($1/v$ vs $1/[S_1]$) at Fixed $[S_2]$

Table 2: Bootstrap summary

Parameter	Median	95% CI (lower)	95% CI (upper)
V_{\max}	1.0	1.0	1.0
K_{m1}	0.1	0.1	0.1
K_{m2}	0.1	0.1	0.1

Feasible region: biomass-demand line segment

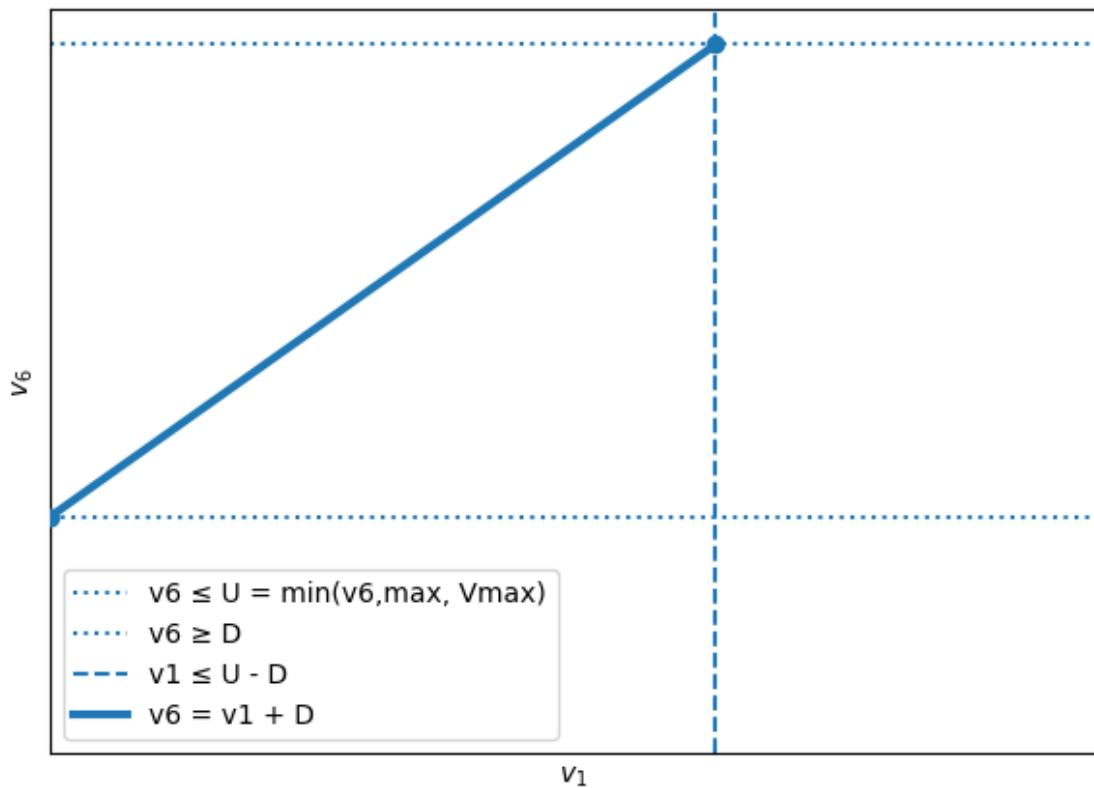


Figure 3: Feasible region: biomass-demand line segment

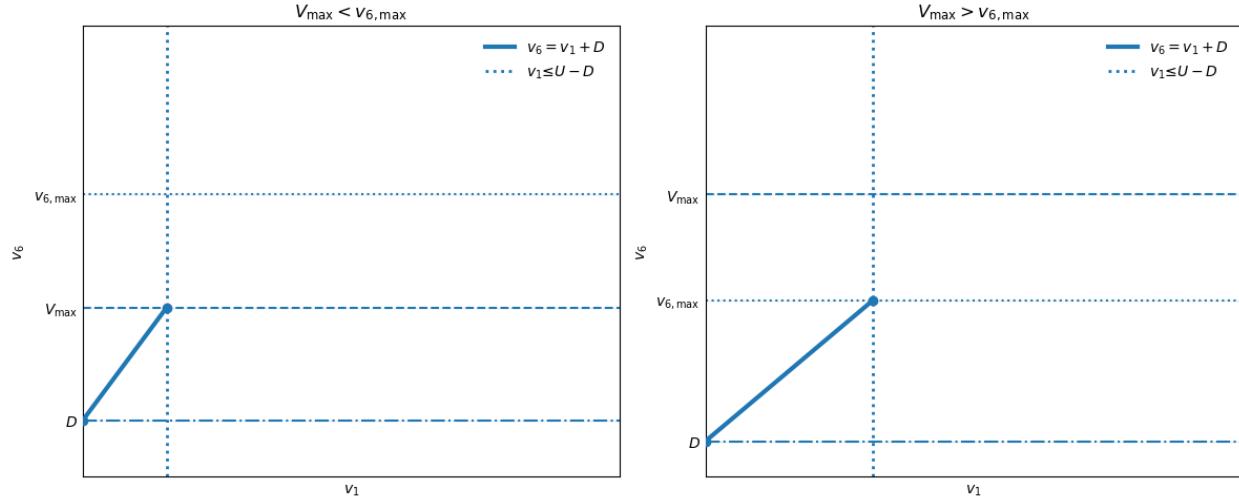


Figure 4: Capacity-Limited Flux Feasibility: V_{\max} -limited vs $v_{6,\max}$ -limited

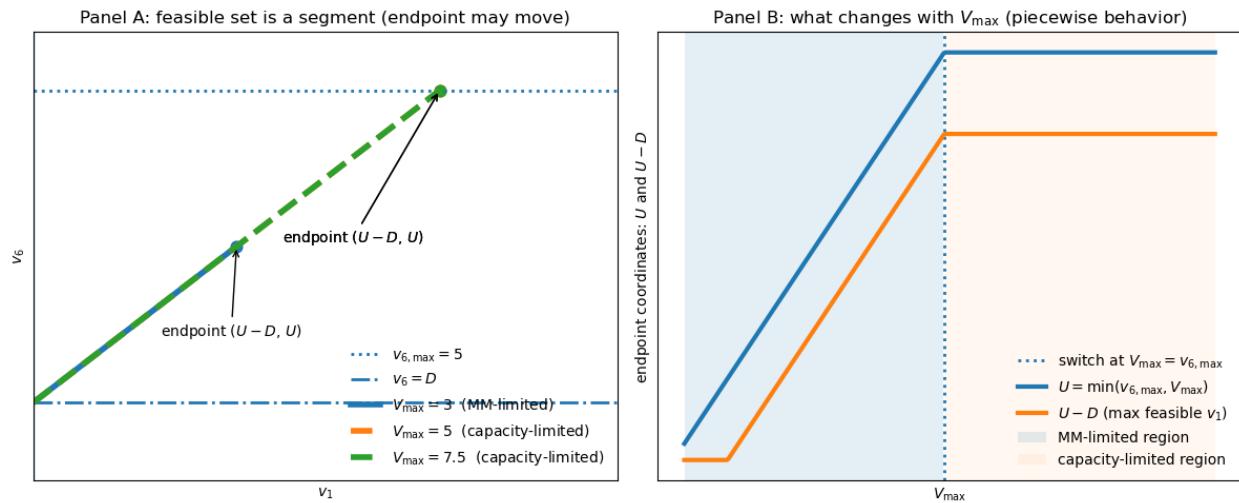


Figure 5: Effect of V_{\max} on the (v_1, v_6) Feasible Set

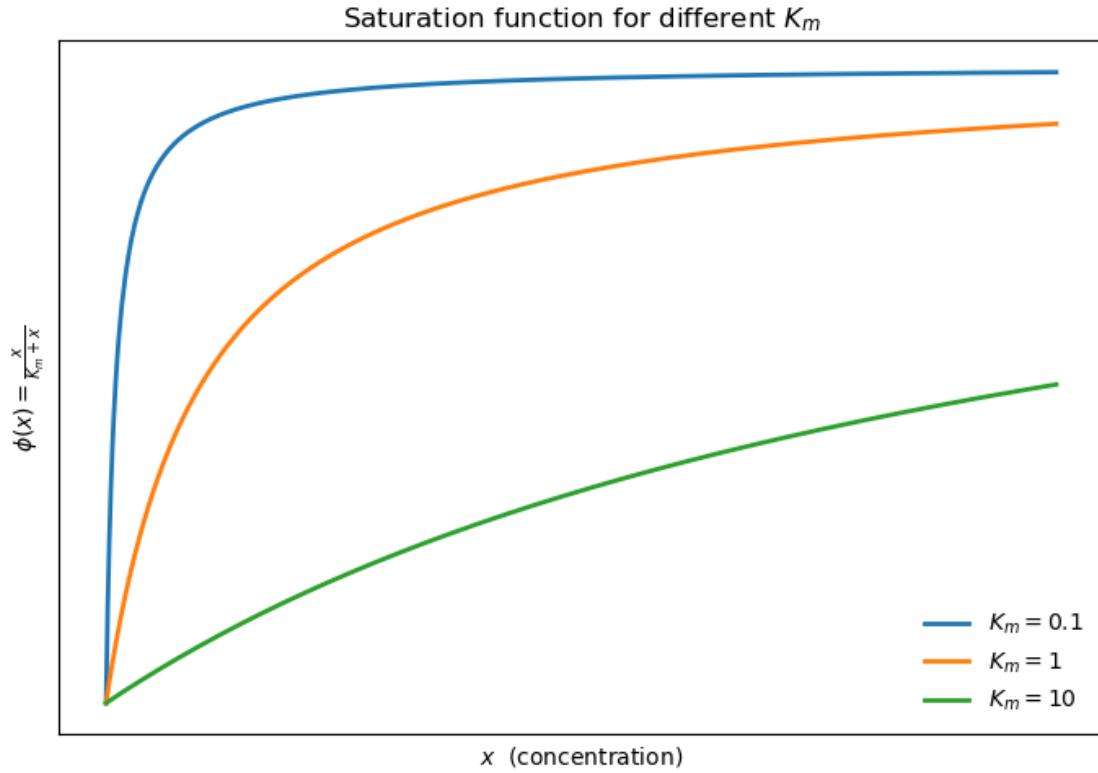


Figure 6: Saturation function for different K_m

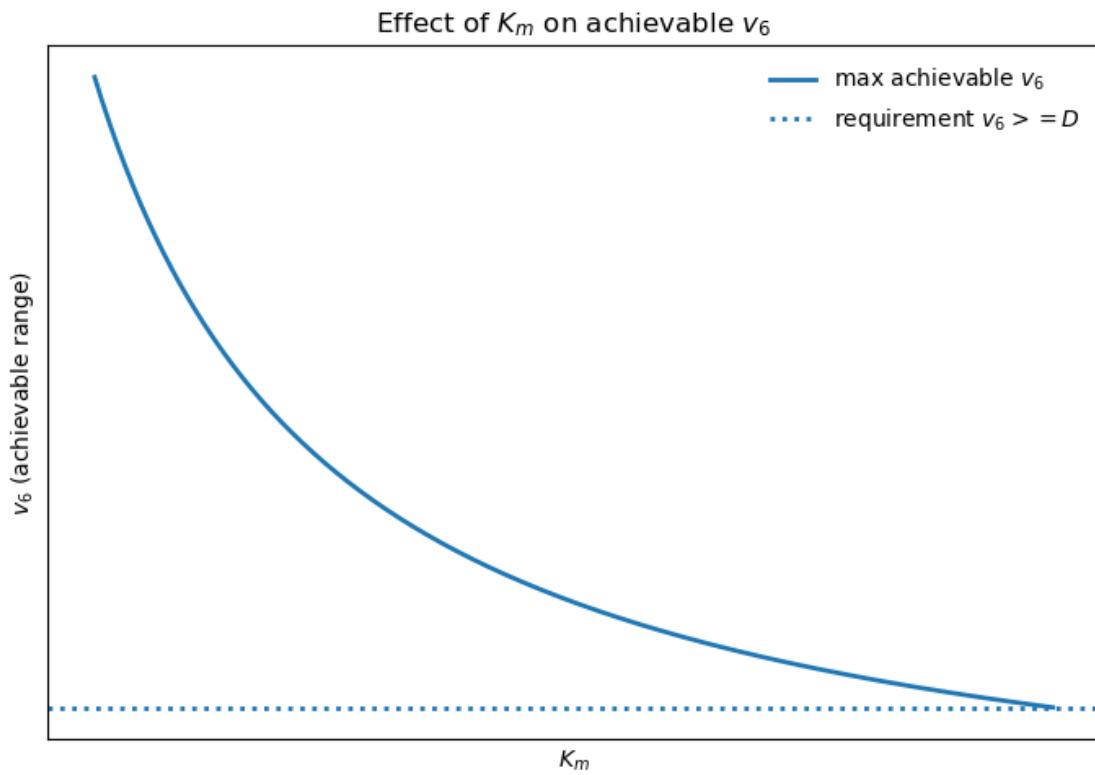


Figure 7: Effect of K_m on achievable v_6