

Figure 1 consists of two plots. The left plot, titled "inducer -> S -| Output (GFP)", shows the relationship between inducer concentration (x-axis, log scale from 10^{-5} to 10^{-1}) and GFP output (y-axis, log scale from 10^3 to 10^4). The data points (purple dots) show a sigmoidal decrease in GFP output as inducer concentration increases, fitted with a black curve. The right plot, titled "Full circuit with stripe", shows the relationship between inducer concentration (x-axis, log scale from 10^{-5} to 10^{-1}) and GFP output (y-axis, linear scale from 3×10^3 to 6×10^3). It displays two sigmoidal curves: a black one and a green one, both showing a decrease in GFP output as inducer concentration increases, with the green curve consistently higher than the black one.

Across all four plots:

RSS (converged)=0.834

RSS (initial)=1.084

RSS (% reduction)=0.565

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.8343702608447632
x: [6.710e-02 2.190e-06 ... 9.109e+04 1.483e+00]
nit: 100000
nfev: 134577
final_simplex: (array([[6.710e-02, 2.190e-06, ..., 9.109e+04, 1.483e+00],
[6.710e-02, 2.190e-06, ..., 9.109e+04, 1.483e+00],
...,
[6.710e-02, 2.190e-06, ..., 9.109e+04, 1.483e+00],
[6.710e-02, 2.190e-06, ..., 9.109e+04, 1.483e+00]]), array([8.344e-01, 8.344e-01, ..., 8.344e-01, 8.344e-01]))

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.710423e-02	6.710423e-02
P_u	0.000000e+00	2.189588e-06	2.189588e-06
K_12	0.000000e+00	1.065381e+03	1.065381e+03
C_pa	0.000000e+00	1.634913e+09	1.634913e+09
A_s	0.000000e+00	1.452100e+04	1.452100e+04
P_r	2.851458e-01	1.285766e+00	1.570911e+00
C_pt	-1.101657e-02	1.101671e-02	1.382298e-07
K_t	9.935439e+00	7.228939e-05	9.935511e+00
A_r	1.490583e+10	1.633549e+05	1.490599e+10
P_o	0.000000e+00	1.229728e+00	1.229728e+00
C_pl	0.000000e+00	1.247659e-02	1.247659e-02
K_l	0.000000e+00	2.018275e-06	2.018275e-06
A_o	0.000000e+00	9.109492e+04	9.109492e+04
F_o	0.000000e+00	1.482604e+00	1.482604e+00