10^{4} Converged 6×10^{3} 4×10^{3} 10^{3} 3×10^{3} time elapsed for this fit --- 104.56512427330017 seconds --- 10^{-3} 10^{-2} 10^{-4} 10^{-4} 10^{-1} 10⁻³ 10^{-2} 10^{-5} 10^{-1} inducer -> S -| Output (GFP) Full circuit with stripe 6×10^{3} 10^{4} 4×10^3 3×10^{3} 10^{3} 10⁻³ 10^{-2} 10^{-2} 10^{-1} 10^{-5} 10^{-4} 10⁻³ 10^{-1} 10^{-5} 10^{-4} Across all four plots: RSS (converged)=2.74RSS (initial) = 3.404RSS (% reduction)=0.554 epsilon Initial guesses Converged message: Optimization terminated successfully. As -229.541196 650.714912 421.173716 success: True B s -1327.761687 16259.979950 14932.218263 status: 0 C s -165.195678 1296.448889 1131.253211 fun: 2.7400541870032584 0.094005 1.154067 1.248072 x: [4.212e+02 1.493e+04 ... 1.073e+00 3.152e+01] 0.000000 2020.019216 2020.019216 Αr nit: 37419 0.000000 23688.809187 23688.809187 Вr nfev: 48551 $C^{-}r$ 0.000000 0.010358 0.010358 final simplex: (array([[4.212e+02, 1.493e+04, ..., 1.073e+00, 0.000000 0.910072 0.910072 3.152e+01], 143.802212 A h -143.235545 0.566667 [4.212e+02, 1.493e+04, ..., 1.073e+00, 50238.271408 79122.518300 B h 28884.246892 3.152e+01], C h 0.002066 0.000929 0.002995 73.563587 1.673894 75.237481 [4.212e+02, 1.493e+04, ..., 1.073e+00, Αо -0.826978 0.895342 0.068364 Во 3.152e+01], -0.626881 [4.212e+02, 1.493e+04, ..., 1.073e+00, Со 2.657699 2.030817 -0.306580 1.379953 1.073372 3.152e+01]), array([2.740e+00, 2.740e+00, ..., 2.740e+00, 2.740e+00])) Νo 29.153868 2.361284 31.515151 F_o

inducer -> S - IR (GFP output)

Initial Guess

Converged Converged

Converged

['SM data type data plots for mutation', 'Regulator6', 'using model:', 'model']

inducer -> sensor (GFP output)

 10^{4}