10^{4} Converged 6×10^{3} 4×10^{3} 10^{3} 3×10^{3} time elapsed for this fit --- 13.365216255187988 seconds --- 10^{-3} 10^{-2} 10^{-4} 10⁻³ 10^{-4} 10^{-1} 10^{-2} 10^{-5} 10^{-1} inducer -> S -| Output (GFP) Full circuit with stripe 4×10^3 10^{4} 3×10^{3} 2×10^{3} 10^{3} 10⁻³ 10^{-2} 10^{-1} 10^{-1} 10^{-5} 10^{-4} 10⁻³ 10^{-4} 10^{-2} 10^{-5} Across all four plots: RSS (converged)=2.174 RSS (initial) = 2.427RSS (% reduction)=0.528 epsilon Initial guesses Converged message: Optimization terminated successfully. As -218.002186 650.714912 4.327127e+02 success: True B s -1214.831890 16259.979950 1.504515e+04 status: 0 C s -131.182061 1296.448889 1.165267e+03 fun: 2.173946679421257 0.075502 1.154067 1.229569e+00 x: [4.327e+02 1.505e+04 ... 1.111e+00 1.533e+00] 0.000000 2020.019216 2.020019e+03 Αr nit: 4835 0.000000 23688.809187 2.368881e+04 Вr nfev: 6523 Cr0.000000 0.010358 1.035760e-02 final simplex: (array([[4.327e+02, 1.505e+04, ..., 1.111e+00, 0.000000 0.910072 9.100723e-01 1.533e + 001A h -143.802212 143.802212 4.465639e-10 [4.327e+02, 1.505e+04, ..., 1.111e+00, 50238.271408 6.965207e+04 B h 19413.802003 1.533e+00], 0.001398 0.000929 2.326791e-03 -1.327771 1.673894 3.461237e-01 Αо [4.327e+02, 1.505e+04, ..., 1.111e+00, 0.684169 0.895342 1.579511e+00 Во 1.533e+00], C_0 [4.327e+02, 1.505e+04, ..., 1.111e+00, 2.657699 2.663510e+00 0.005811 -0.268733 1.379953 1.111219e+00 1.533e+00]), array([2.174e+00, 2.174e+00, ..., 2.174e+00, 2.174e+00])) -0.828700 2.361284 1.532584e+00

inducer -> S -|R (GFP output)

Initial Guess

Converged Converged

Converged

['SM data type data plots for mutation', 'Regulator3', 'using model:', 'model']

inducer -> sensor (GFP output)

 10^{4}