inducer -> sensor (GFP output) inducer -> S - IR (GFP output) Converged Converged 10^{4} Converged 10^{4} Converged 6×10^{3} 4×10^{3} 3×10^3 10³ time elapsed for this fit --- 20.60858988761902 seconds --- 10^{-3} 10^{-2} 10^{-2} 10^{-4} 10^{-1} 10^{-4} 10⁻³ 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} 10⁻⁵ 10^{-2} 10^{-5} 10^{-3} 10^{-4} 10^{-1} 10^{-2} 10^{-1} 10^{-4} Across all four plots: RSS (converged)=3.467RSS (initial) = 5.015RSS (% reduction)=0.591 epsilon Initial guesses Converged message: Optimization terminated successfully. 0.000000 A_s 650.714912 650.714912 success: True 0.000000 16259.979950 16259.979950 status: 0 C_s 0.000000 1296.448889 1296.448889 fun: 3.467278812750455 0.000000 1.154067 1.154067 x: [6.507e+02 1.626e+04 ... 1.542e+00 7.578e+00] A r -1954.758661 2020.019216 65.260555 nit: 7957 B r 19302.272589 23688.809187 42991.081776 nfev: 10709 0.010358 -0.004600 0.005757 final simplex: (array([[6.507e+02, 1.626e+04, ..., 1.542e+00, -0.423180 0.910072 0.486892 Νr 7.578e+001, 12.982678 143.802212 156.784891 Αh [6.507e+02, 1.626e+04, ..., 1.542e+00, B h -37875.707110 50238.271408 12362.564298 7.578e+001, C h -0.000751 0.000929 0.000179

Initial Guess

[6.507e+02, 1.626e+04, ..., 1.542e+00,

[6.507e+02, 1.626e+04, ..., 1.542e+00,

7.578e+00]), array([3.467e+00, 3.467e+00, ..., 3.467e+00, 3.467e+00]))

7.578e+00],

['SM data type data plots for mutation', 'Sensor3', 'using model:', 'model']

0.329088

-0.480707

-0.580932

0.162265 5.216738

Αо

 C_0

1.673894

0.895342

2.657699

1.379953

2.361284

2.002982

0.414635

2.076767

1.542218

7.578022