**['SM data type data plots for mutation', 'Output5', 'using model:', 'model']**



inducer -> sensor (GFP output)

inducer ->S -|R (GFP output)

inducer -> S -| Output (GFP)

Full circuit with stripe

| Initial Guess | Converged | Converged | Converged | Converged |
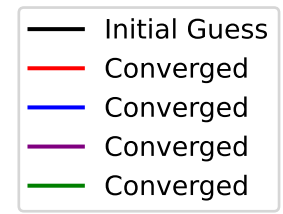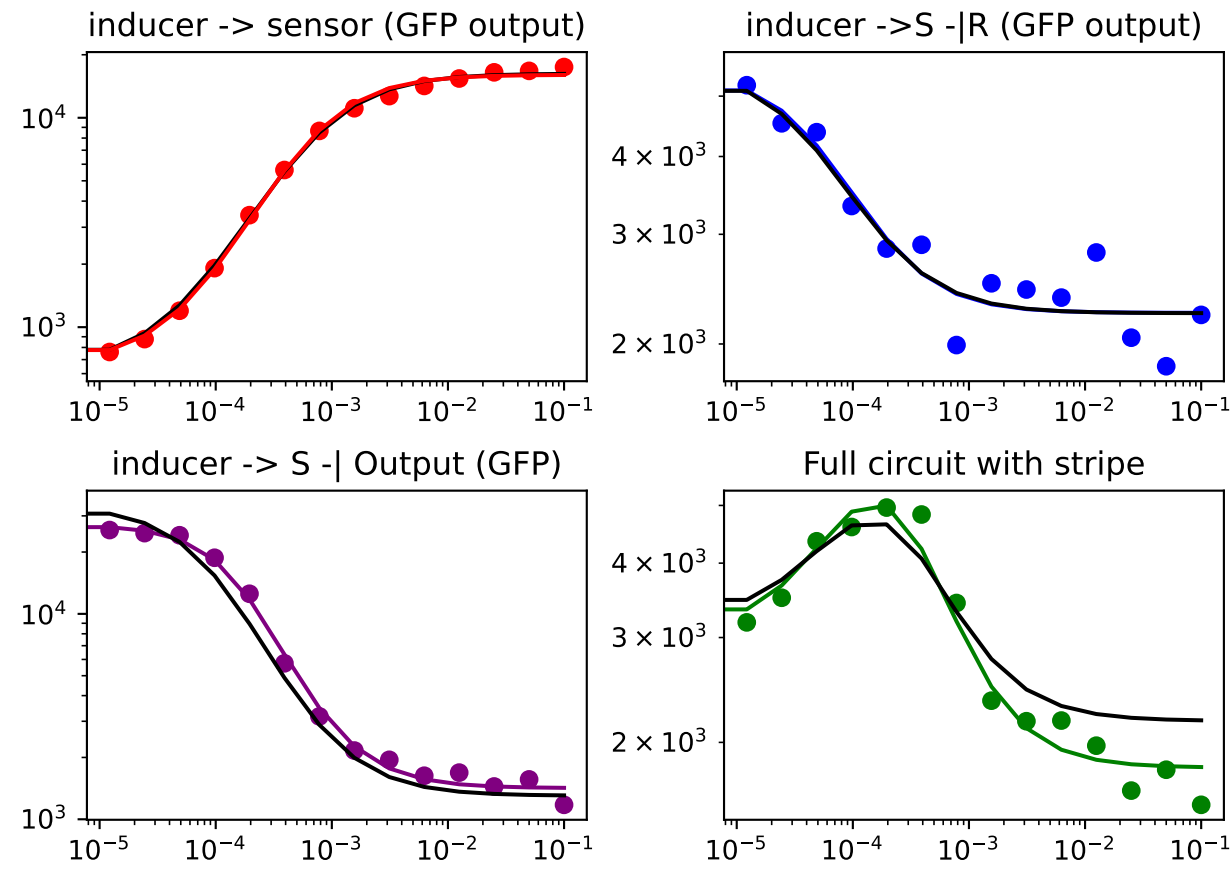
time elapsed for this fit
--- 11.406686067581177 seconds ---

Across all four plots:

RSS (converged)=0.073

RSS (initial)=0.184

RSS (% reduction)=0.715

| | epsilon | Initial_guesses | Converged |
|---|---|---|---|
| A_s | 25.174826 | 650.714912 | 6.758897e+02 |
| B_s | -214.601699 | 16259.979950 | 1.604538e+04 |
| C_s | 87.822022 | 1296.448889 | 1.384271e+03 |
| N_s | 0.074361 | 1.154067 | 1.228428e+00 |
| A_r | 0.000000 | 2020.019216 | 2.020019e+03 |
| B_r | 0.000000 | 23688.809187 | 2.368881e+04 |
| C_r | 0.000000 | 0.010358 | 1.035760e-02 |
| N_r | 0.000000 | 0.910072 | 9.100723e-01 |
| A_h | -143.802212 | 143.802212 | 2.631796e-12 |
| B_h | -19421.430749 | 50238.271408 | 3.081684e+04 |
| C_h | -0.000512 | 0.000929 | 4.167862e-04 |
| A_o | 0.891442 | 1.673894 | 2.565336e+00 |
| B_o | 0.603329 | 0.895342 | 1.498671e+00 |
| C_o | 0.116487 | 2.657699 | 2.774186e+00 |
| N_o | 0.215593 | 1.379953 | 1.595546e+00 |
| F_o | -0.948157 | 2.361284 | 1.413126e+00 |

message: Optimization terminated successfully.
success: True
 status: 0
    fun: 0.0732268052454623
     x: [ 6.759e+02  1.605e+04 ...  1.596e+00  1.413e+00]
   nit: 3672
  nfev: 4895
final_simplex: (array([[ 6.759e+02,  1.605e+04, ...,  1.596e+00,
        1.413e+00],
       [ 6.759e+02,  1.605e+04, ...,  1.596e+00,
        1.413e+00],
       ...,
       [ 6.759e+02,  1.605e+04, ...,  1.596e+00,
        1.413e+00],
       [ 6.759e+02,  1.605e+04, ...,  1.596e+00,
        1.413e+00]]), array([ 7.323e-02,  7.323e-02, ...,  7.323e-02,  7.323e-02]))