## ['SM data type data plots for mutation', 'Output3', 'using model:', 'model'] inducer -> sensor (GFP output) inducer -> S - IR (GFP output) $10^{4}$ $4 \times 10^{3}$ $3 \times 10^{3}$ 10<sup>3</sup> $2 \times 10^{3}$ 10<sup>-3</sup> $10^{-1}$ $10^{-2}$ $10^{-2}$ $10^{-1}$ $10^{-4}$ $10^{-5}$ $10^{-4}$ $10^{-3}$ inducer -> S -| Output (GFP) Full circuit with stripe $4 \times 10^{3}$ $3 \times 10^{3}$ $10^{4}$ $2 \times 10^{3}$ $10^{3}$ $10^{3}$ $10^{-4}$ $10^{-3}$ $10^{-2}$ $10^{-3}$ 10<sup>-5</sup> $10^{-4}$ $10^{-1}$ $10^{-5}$ $10^{-2}$ $10^{-1}$ Across all four plots:

time elapsed for this fit --- 18.357605934143066 seconds ---

**Initial Guess** 

ConvergedConvergedConverged

Converged

```
RSS (converged)=0.075
```

RSS (initial)=0.937

RSS (% reduction)=0.926

```
epsilon Initial guesses
                                 Converged
                                                     message: Optimization terminated successfully.
     13.645011
                   650.714912
                                 664.359923
                                                     success: True
     221.550307
                   16259.979950 16481.530257
                                                     status: 0
     -83.516940
                   1296.448889 1212.931949
                                                       fun: 0.07523982015554483
N_s
     -0.005793
                    1.154067
                                1.148274
                                                        x: [ 6.644e+02 1.648e+04 ... 1.311e+00 1.975e+00]
A r
      0.000000
                  2020.019216 2020.019216
                                                       nit: 6637
Βr
      0.000000
                 23688.809187 23688.809187
                                                      nfev: 8869
Cr
      0.000000
                    0.010358
                                0.010358
                                                 final simplex: (array([[ 6.644e+02, 1.648e+04, ..., 1.311e+00,
      0.000000
                    0.910072
                                0.910072
                                                               1.975e+001,
                    143.802212
                               162.139041
Αh
      18.336828
                                                              [6.644e+02, 1.648e+04, ..., 1.311e+00,
B_h 21314.905583
                    50238.271408 71553.176992
                                                               1.975e+00],
Ch
      0.001043
                    0.000929
                                0.001973
Αо
      -1.228969
                    1.673894
                                0.444925
                                                              [6.644e+02, 1.648e+04, ..., 1.311e+00,
      0.343934
                    0.895342
                                1.239276
Во
                                                               1.975e+00],
                                                             [6.644e+02, 1.648e+04, ..., 1.311e+00,
Со
      0.018406
                    2.657699
                                2.676105
      -0.068533
                    1.379953
                                1.311419
                                                               1.975e+00]]), array([7.524e-02, 7.524e-02, ..., 7.524e-02, 7.524e-02]))
                                1.975289
      -0.385995
                    2.361284
```