['SM data type data plots for mutation', 'Output1', 'using model:', 'model'] **Initial Guess** inducer -> sensor (GFP output) inducer -> S - IR (GFP output) Converged Converged Converged 10^{4} 4×10^{3} Converged 3×10^{3} 10³ 2×10^{3} 10⁻³ 10^{-1} 10^{-2} 10^{-2} 10⁻⁵ 10^{-4} 10^{-4} 10^{-3} 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^{-1} 10⁻⁵ 10^{-3} 10^{-2} 10^{-4} 10^{-5} 10^{-2} 10^{-4} 10^{-1} Across all four plots: RSS (converged)=0.056 RSS (initial)=0.152

RSS (% reduction)=0.732

time elapsed for this fit --- 15.891180515289307 seconds ---

```
epsilon Initial guesses
                                 Converged
                                                     message: Optimization terminated successfully.
A_s 22.022965
                   650.714912
                                672.737877
                                                     success: True
     7.504290
                 16259.979950 16267.484240
                                                     status: 0
     -5.819438
                  1296.448889
                               1290.629450
                                                       fun: 0.05567006626750709
     0.031977
                    1.154067
                                1.186044
                                                        x: [ 6.727e+02 1.627e+04 ... 1.425e+00 1.054e+00]
Αr
     0.000000
                  2020.019216 2020.019216
                                                       nit: 4382
Βr
     0.000000
                 23688.809187 23688.809187
                                                       nfev: 5971
     0.000000
                   0.010358
                               0.010358
                                                 final simplex: (array([[ 6.727e+02, 1.627e+04, ..., 1.425e+00,
     0.000000
                   0.910072
                               0.910072
                                                               1.054e + 001,
                    143.802212 390.725920
    246.923708
                                                              [6.727e+02, 1.627e+04, ..., 1.425e+00,
B h 1923.504529
                   50238.271408 52161.775937
                                                               1.054e+00],
      0.000216
Ch
                    0.000929
                                0.001145
                                                              [ 6.727e+02, 1.627e+04, ..., 1.425e+00,
     -0.316898
                    1.673894
                                1.356996
Αо
     1.245829
                    0.895342
                                2.141171
                                                               1.054e+00],
                                                              [ 6.727e+02, 1.627e+04, ..., 1.425e+00,
     -0.702571
                    2.657699
                                1.955127
     0.045365
                    1.379953
                                1.425318
                                                               1.054e+00]]), array([ 5.567e-02, 5.567e-02, ..., 5.567e-02, 5.567e-02]))
    -1.306895
                    2.361284
                               1.054389
```