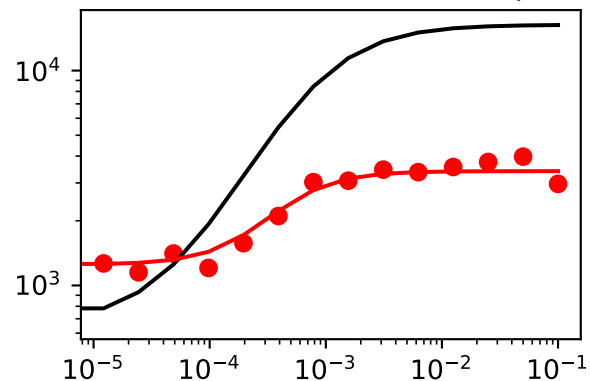# ['SM data type data plots for mutation', 'Sensor3']
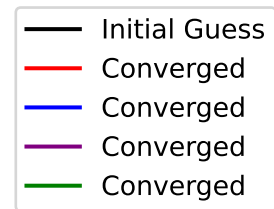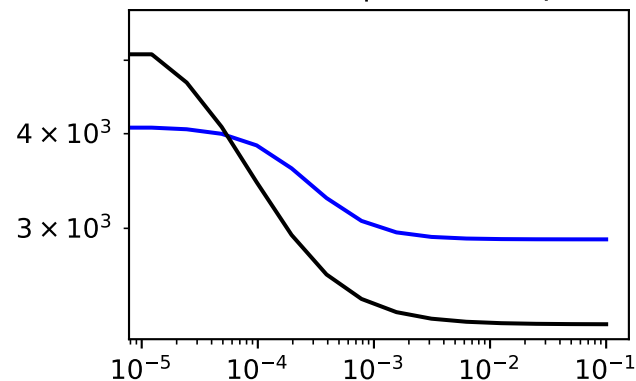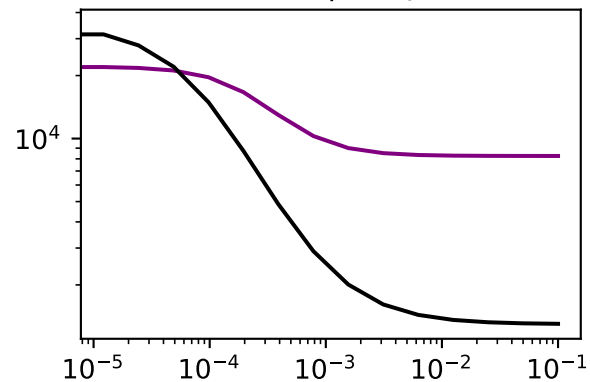


**inducer -> sensor (GFP output)**

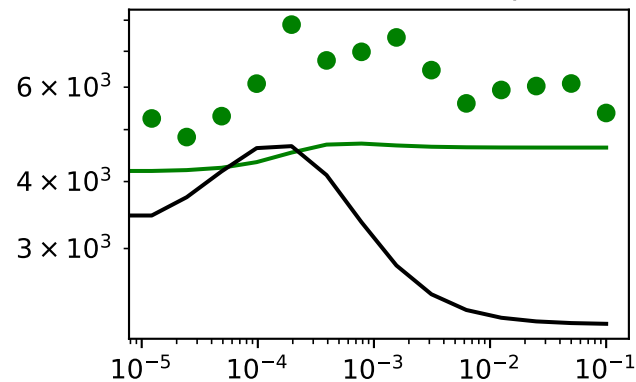**inducer ->S -|R (GFP output)**

**inducer -> S -| Output (GFP)**

**Full circuit with stripe**

Legend: Initial Guess, Converged, Converged, Converged, Converged

Across all four plots:

RSS (converged)=0.308

RSS (initial)=5.001

RSS (% reduction)=0.942

|  | epsilon | Initial_guesses | Converged |
|---|---|---|---|
| A_s | 592.013241 | 6.599635e+02 | 1.251977e+03 |
| B_s | -12943.466542 | 1.634714e+04 | 3.403673e+03 |
| C_s | 995.055804 | 1.259256e+03 | 2.254312e+03 |
| N_s | 0.413037 | 1.160440e+00 | 1.573476e+00 |
| A_r | 0.000000 | 1.998310e+03 | 1.998310e+03 |
| B_r | 0.000000 | 2.040009e+11 | 2.040009e+11 |
| C_r | 0.000000 | 2.771808e+06 | 2.771808e+06 |
| N_r | 0.000000 | 8.375226e-01 | 8.375226e-01 |
| A_h | 0.000000 | 5.477878e-06 | 5.477878e-06 |
| B_h | 0.000000 | 6.710814e+04 | 6.710814e+04 |
| C_h | 0.000000 | 1.412943e-03 | 1.412943e-03 |
| A_o | 0.000000 | 5.414338e+07 | 5.414338e+07 |
| B_o | 0.000000 | 2.126439e+00 | 2.126439e+00 |
| C_o | 0.000000 | 2.720605e+00 | 2.720605e+00 |
| N_o | 0.000000 | 1.250443e+00 | 1.250443e+00 |

message: Optimization terminated successfully.
success: True
 status: 0
    fun: 0.3079602657800569
      x: [ 1.252e+03  3.404e+03 ... 2.721e+00  1.250e+00]
    nit: 819
   nfev: 1302
final_simplex: (array([[ 1.252e+03,  3.404e+03, ...,  2.721e+00,
                1.250e+00],
             [ 1.252e+03,  3.404e+03, ...,  2.721e+00,
              1.250e+00],
             ...,
             [ 1.252e+03,  3.404e+03, ...,  2.721e+00,
              1.250e+00],
             [ 1.252e+03,  3.404e+03, ...,  2.721e+00,
              1.250e+00]]), array([ 3.080e-01,  3.080e-01, ...,  3.080e-01,  3.080e-01]))