final_simplex: (array([[1.14425325e+03, 3.55698767e+03, 2.12536221e+03, 1.55214310e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698769e+03, 2.12536219e+03, 1.55214310e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425323e+03, 3.55698769e+03, 2.12536223e+03, 1.55214305e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698772e+03, 2.12536216e+03, 1.55214305e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425325e+03, 3.55698771e+03, 2.12536217e+03, 1.55214309e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425326e+03, 3.55698766e+03, 2.12536226e+03, 1.55214313e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698766e+03, 2.12536227e+03, 1.55214308e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425325e+03, 3.55698768e+03, 2.12536223e+03, 1.55214310e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455613e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425325e+03, 3.55698768e+03, 2.12536224e+03, 1.55214310e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425325e+03, 3.55698767e+03, 2.12536222e+03, 1.55214313e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425323e+03, 3.55698771e+03, 2.12536215e+03, 1.55214300e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455612e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698771e+03, 2.12536214e+03, 1.55214306e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455613e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698768e+03, 2.12536225e+03, 1.55214313e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455613e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425325e+03, 3.55698770e+03, 2.12536218e+03, 1.55214304e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455611e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425323e+03, 3.55698769e+03, 2.12536219e+03, 1.55214297e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425326e+03, 3.55698767e+03, 2.12536217e+03, 1.55214308e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00],
   [1.14425324e+03, 3.55698771e+03, 2.12536215e+03, 1.55214300e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455615e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00]]), array([0.05232097, 0.05232097, 0.05232097, 0.05232097, 0.05232097,
    0.05232097, 0.05232097, 0.05232097, 0.05232097, 0.05232097,
    0.05232097, 0.05232097, 0.05232097, 0.05232097, 0.05232097,
    0.05232097, 0.05232097]))
    fun: 0.0523209738820185
message: 'Optimization terminated successfully.'
   nfev: 1547
    nit: 1013
 status: 0
success: True
      x: array([1.14425325e+03, 3.55698767e+03, 2.12536221e+03, 1.55214310e+00,
    1.91617561e+03, 1.88742408e+04, 9.03017988e-03, 8.20433340e-01,
    6.83835638e+02, 3.24643802e+04, 4.73376905e-04, 3.83455614e+00,
    6.32148081e-01, 9.72768210e-01, 2.64017386e+00, 1.91933916e+00])

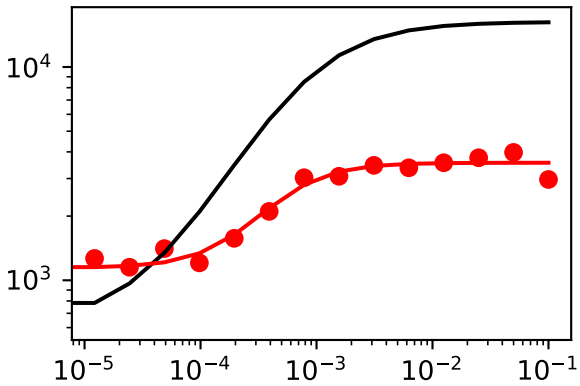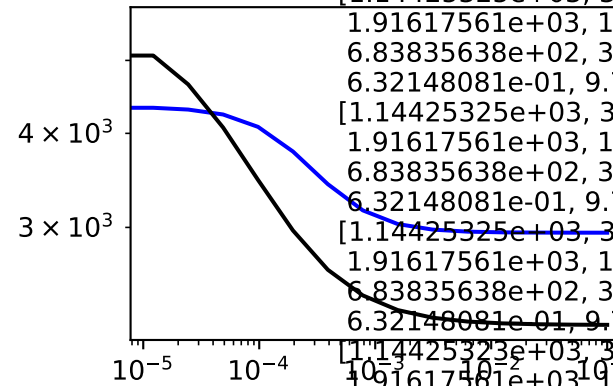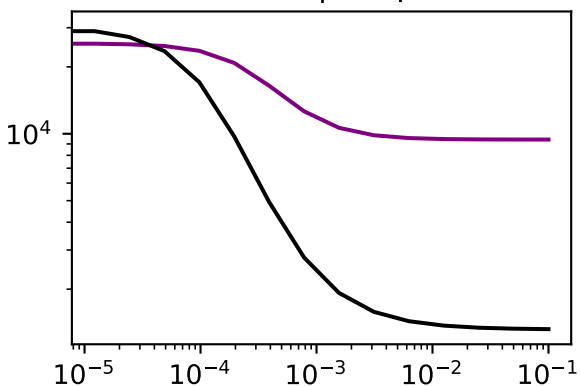## ['SM data type data plots for mutation', 'Sensor3']

inducer -> sensor (GFP output)

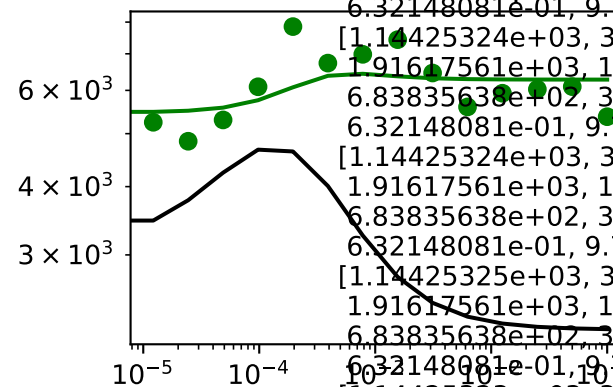inducer -> S_R (GFP output)

inducer -> S -| Output (GFP)

Full circuit with stripe

Legend:
- Initial Guess
- Converged
- Converged
- Converged
- Converged

Across all four plots:

RSS (converged)=0.052

RSS (initial)=5.036

RSS (% reduction)=0.99

	epsilon	Initial_guesses	Converged
A_s	526.206164	618.047086	1144.253250
B_s	-12721.868929	16278.856600	3556.987671
C_s	824.708422	1300.653790	2125.362212
N_s	0.455602	1.096541	1.552143
A_r	0.000000	1916.175610	1916.175610
B_r	0.000000	18874.240800	18874.240800
C_r	0.000000	0.009030	0.009030
N_r	0.000000	0.820433	0.820433
A_h	0.000000	683.835638	683.835638
B_h	0.000000	32464.380200	32464.380200
C_h	0.000000	0.000473	0.000473
F_o	1.013204	2.821352	3.834556
A_o	0.000000	0.632148	0.632148
B_o	0.000000	0.972768	0.972768
C_o	0.000000	2.640174	2.640174
N_o	0.000000	1.919339	1.919339