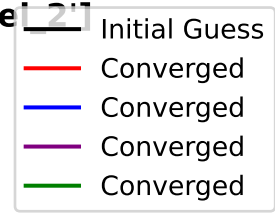
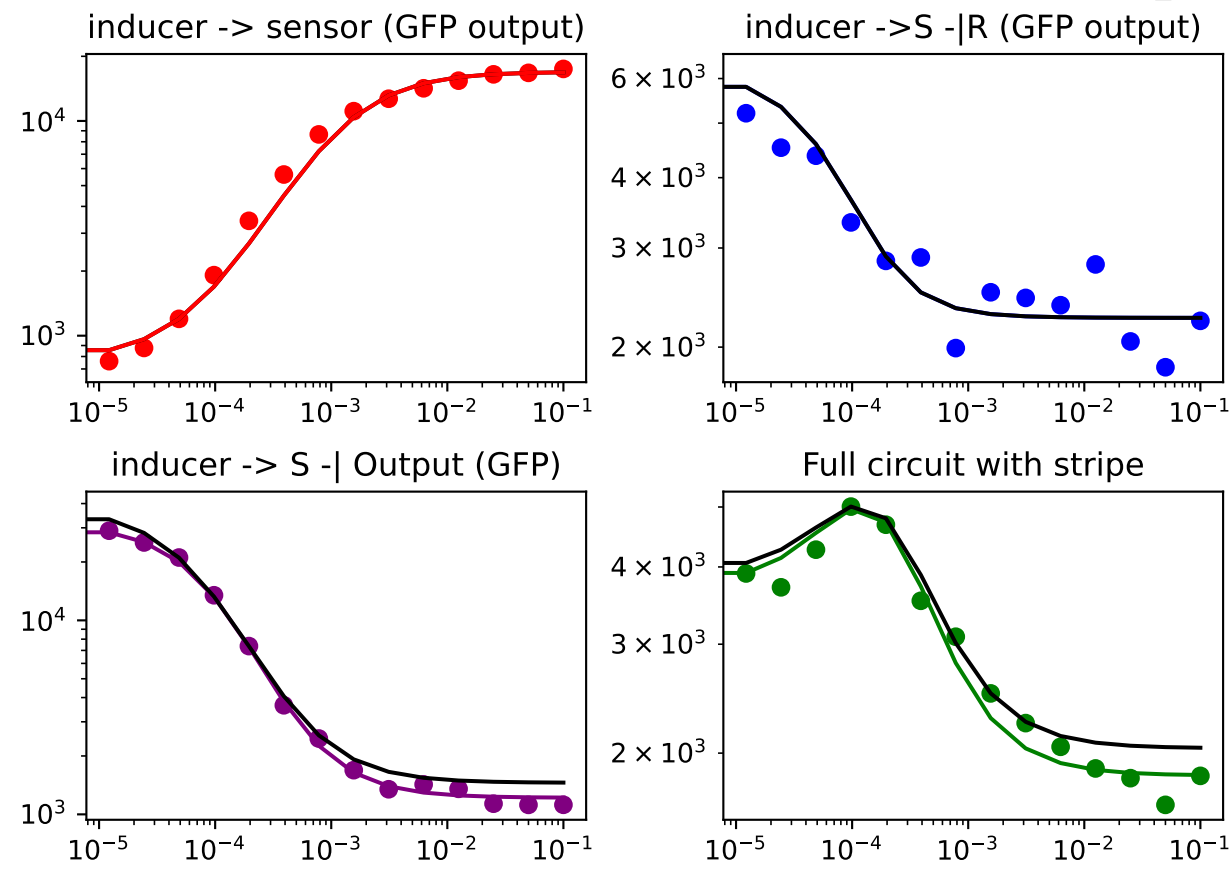


['SM data type data plots for mutation', 'Output1', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 8.195075511932373 seconds ---

Across all four plots:

RSS (converged)=0.103

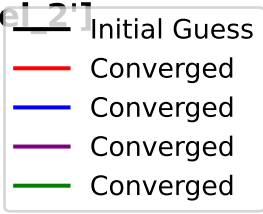
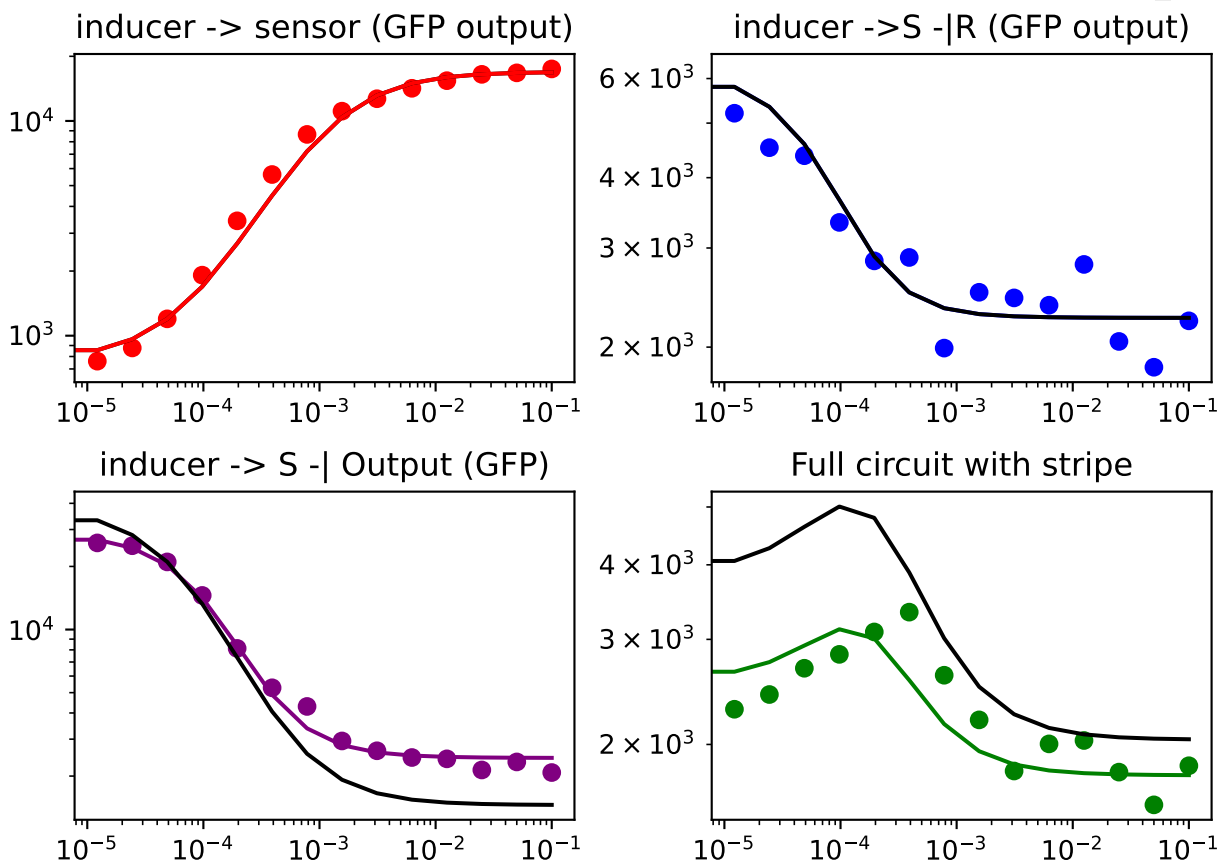
RSS (initial)=0.177

RSS (% reduction)=0.633

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	-1.224237e+02	9.859837e+02	863.559976
B_o	-1.794528e+07	1.801530e+07	70015.754491
C_o	-9.952933e-02	1.010522e-01	0.001523
N_o	2.072629e-01	1.417996e+00	1.625258
F_o	1.187367e-01	1.477611e+00	1.596347

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.10265116222033284
x: [7.672e+02 1.694e+04 ... 1.625e+00 1.596e+00]
nit: 2780
nfev: 3980
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.625e+00, 1.596e+00],
[7.672e+02, 1.694e+04, ..., 1.625e+00, 1.596e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.625e+00, 1.596e+00],
[7.672e+02, 1.694e+04, ..., 1.625e+00, 1.596e+00]]), array([1.027e-01, 1.027e-01, ..., 1.027e-01, 1.027e-01]))

['SM data type data plots for mutation', 'Output10', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 13.001355409622192 seconds ---

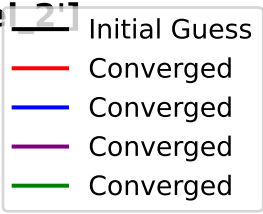
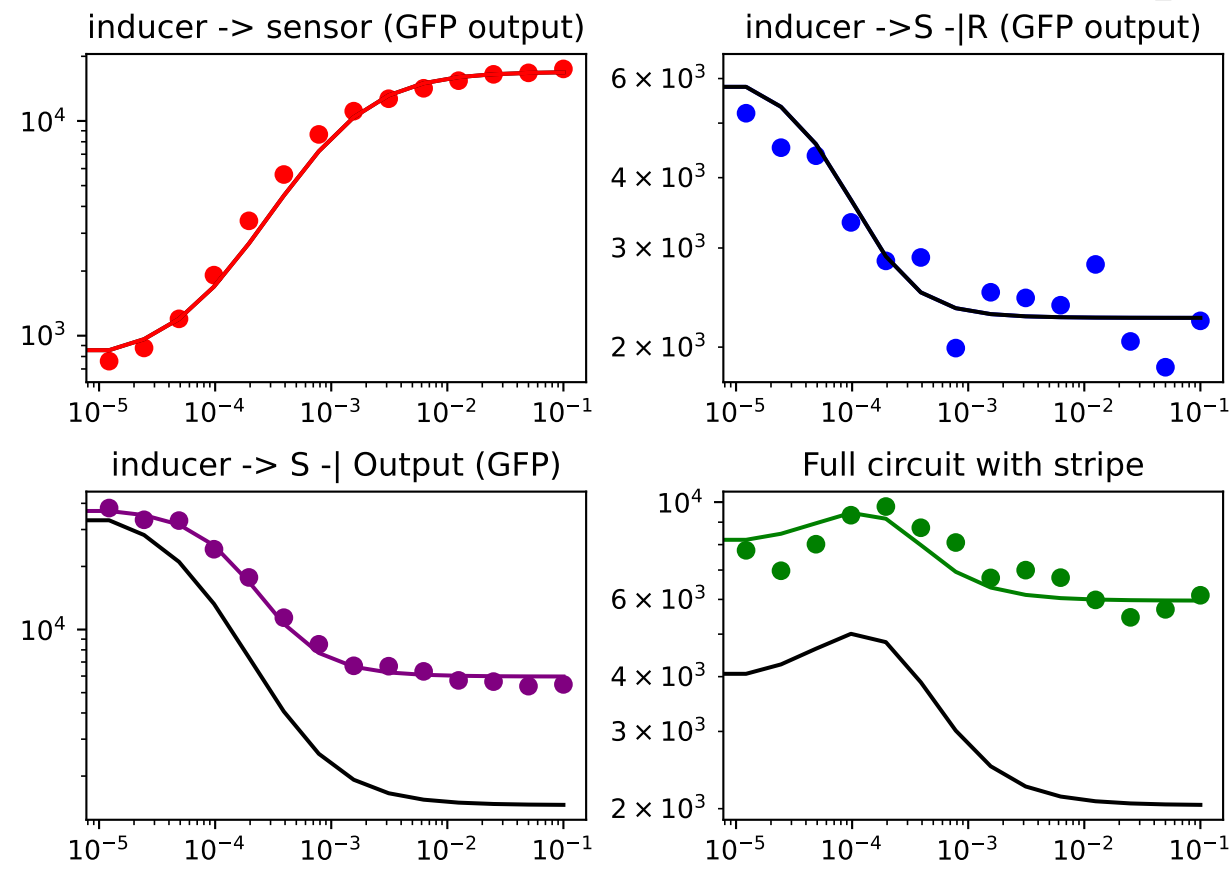
Across all four plots:

RSS (converged)=0.158
RSS (initial)=0.835
RSS (% reduction)=0.841

	epsilon	Initial guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	1.184933e+03	9.859837e+02	2170.916523
B_o	-1.797095e+07	1.801530e+07	44351.156117
C_o	-1.000224e-01	1.010522e-01	0.001030
N_o	3.647987e-01	1.417996e+00	1.782794
F_o	-7.338672e-01	1.477611e+00	0.743743

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.15778735075686035
x: [7.672e+02 1.694e+04 ... 1.783e+00 7.437e-01]
nit: 3137
nfev: 4483
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.783e+00,
7.437e-01],
[7.672e+02, 1.694e+04, ..., 1.783e+00,
7.437e-01],
...,
[7.672e+02, 1.694e+04, ..., 1.783e+00,
7.437e-01],
[7.672e+02, 1.694e+04, ..., 1.783e+00,
7.437e-01]]), array([1.578e-01, 1.578e-01, ..., 1.578e-01, 1.578e-01]))

['SM data type data plots for mutation', 'Output2', 'using model:', 'model_hill.model']



time elapsed for this fit
--- 13.608337879180908 seconds ---

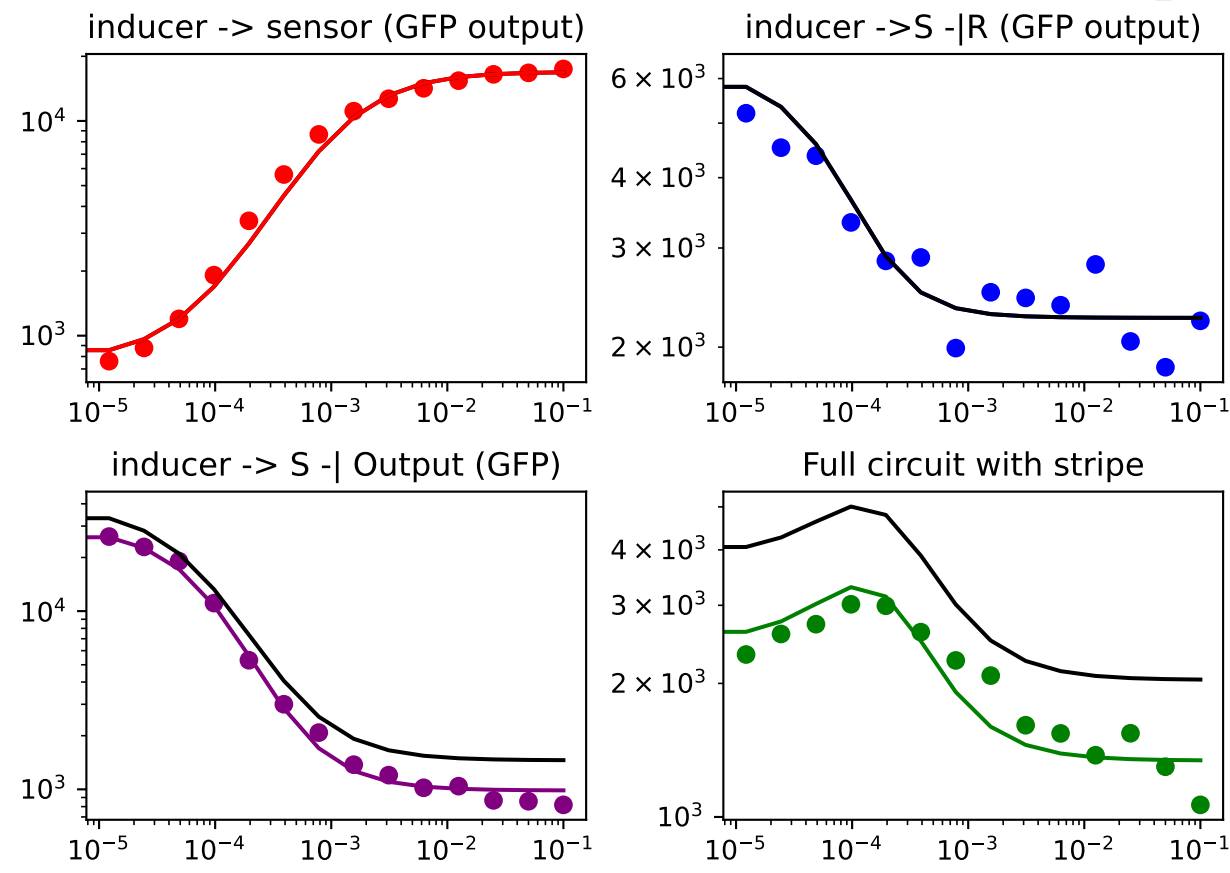
Across all four plots:

RSS (converged)=0.118
RSS (initial)=5.403
RSS (% reduction)=0.979

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	4.539908e+03	9.859837e+02	5525.891701
B_o	-1.797557e+07	1.801530e+07	39730.078513
C_o	-1.004557e-01	1.010522e-01	0.000596
N_o	5.231745e-01	1.417996e+00	1.941170
F_o	-4.626769e-01	1.477611e+00	1.014934

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.11803101772645758
x: [7.672e+02 1.694e+04 ... 1.941e+00 1.015e+00]
nit: 3779
nfev: 5351
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.941e+00, 1.015e+00],
[7.672e+02, 1.694e+04, ..., 1.941e+00, 1.015e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.941e+00, 1.015e+00],
[7.672e+02, 1.694e+04, ..., 1.941e+00, 1.015e+00]]), array([1.180e-01, 1.180e-01, ..., 1.180e-01, 1.180e-01]))

['SM data type data plots for mutation', 'Output3', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 10.66912293434143 seconds ---

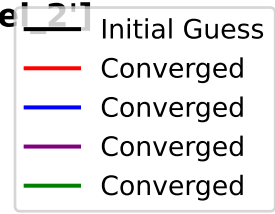
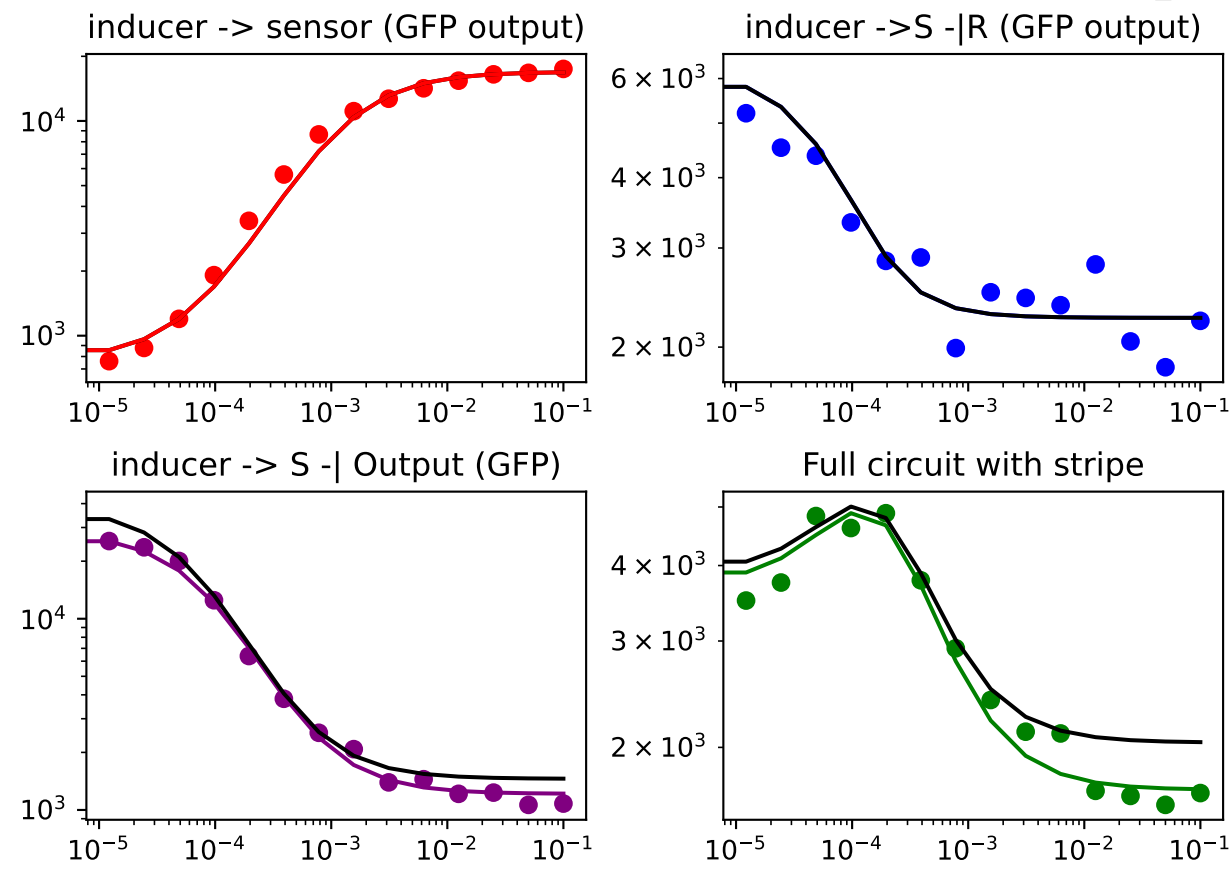
Across all four plots:

RSS (converged)=0.157
RSS (initial)=1.015
RSS (% reduction)=0.866

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	-2.194429e+02	9.859837e+02	766.540715
B_o	-1.793478e+07	1.801530e+07	80520.894505
C_o	-9.920462e-02	1.010522e-01	0.001848
N_o	2.975902e-01	1.417996e+00	1.715586
F_o	-5.637990e-02	1.477611e+00	1.421231

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.15695557275595837
x: [7.672e+02 1.694e+04 ... 1.716e+00 1.421e+00]
nit: 3344
nfev: 4779
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.716e+00, 1.421e+00],
[7.672e+02, 1.694e+04, ..., 1.716e+00, 1.421e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.716e+00, 1.421e+00],
[7.672e+02, 1.694e+04, ..., 1.716e+00, 1.421e+00]]), array([1.570e-01, 1.570e-01, ..., 1.570e-01, 1.570e-01]))

['SM data type data plots for mutation', 'Output4', 'using model:', 'model_hill.model']



time elapsed for this fit
--- 6.909970998764038 seconds ---

Across all four plots:

RSS (converged)=0.121

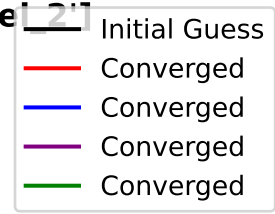
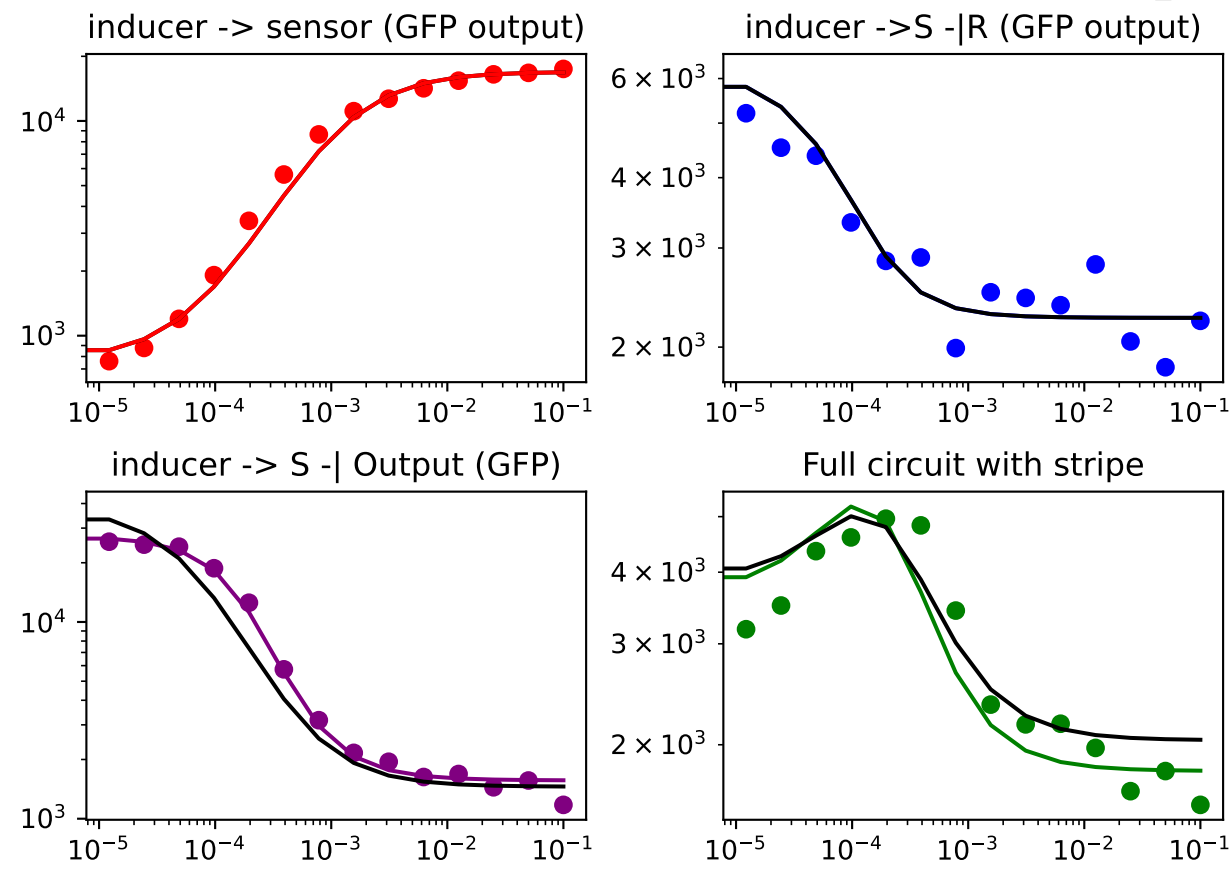
RSS (initial)=0.244

RSS (% reduction)=0.669

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	-3.028618e+02	9.859837e+02	683.121897
B_o	-1.791747e+07	1.801530e+07	97824.797034
C_o	-9.849612e-02	1.010522e-01	0.002556
N_o	-3.502596e-02	1.417996e+00	1.382970
F_o	2.762577e-02	1.477611e+00	1.505236

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.1205528463288701
x: [7.672e+02 1.694e+04 ... 1.383e+00 1.505e+00]
nit: 2227
nfev: 3307
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.383e+00, 1.505e+00],
[7.672e+02, 1.694e+04, ..., 1.383e+00, 1.505e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.383e+00, 1.505e+00],
[7.672e+02, 1.694e+04, ..., 1.383e+00, 1.505e+00]]), array([1.206e-01, 1.206e-01, ..., 1.206e-01, 1.206e-01]))

['SM data type data plots for mutation', 'Output5', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 7.81069803237915 seconds ---

Across all four plots:

RSS (converged)=0.165

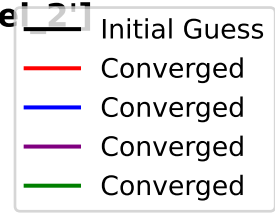
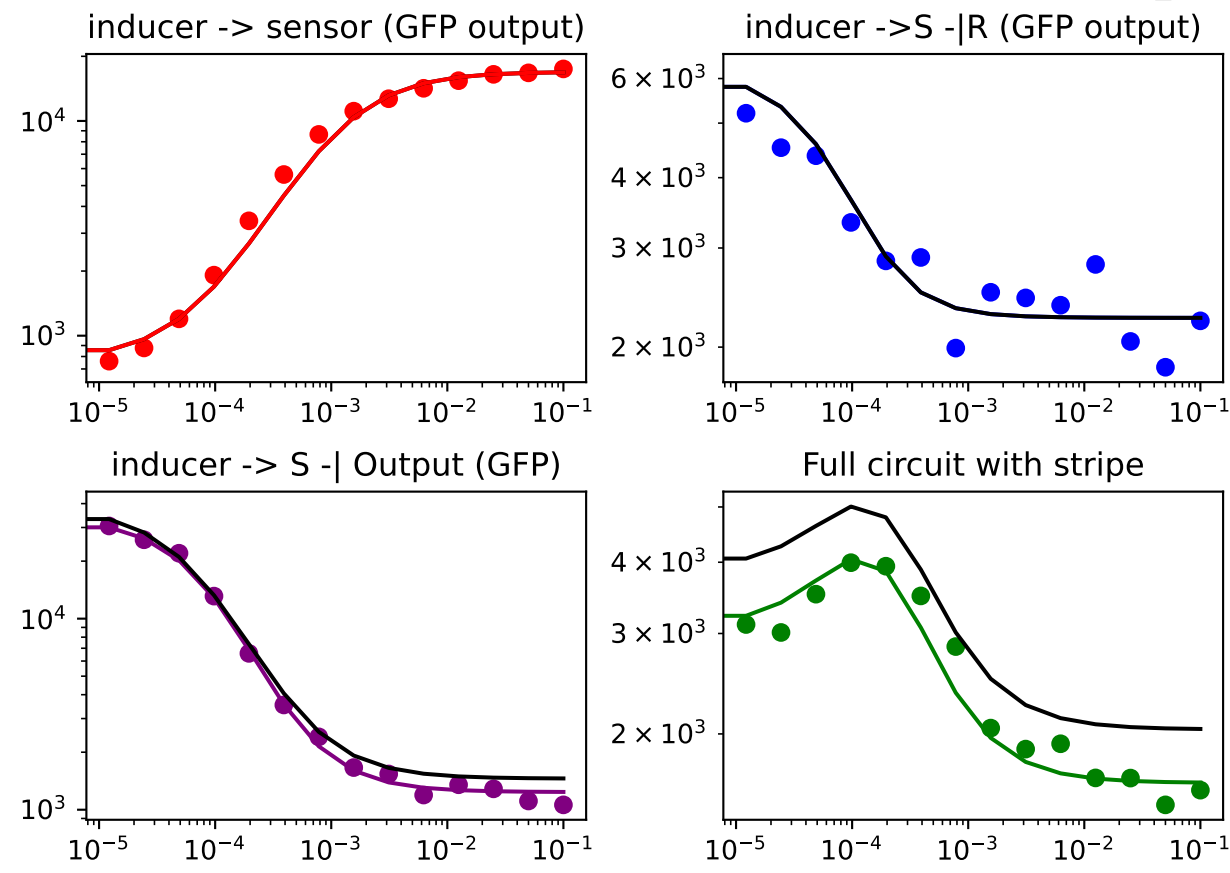
RSS (initial)=0.317

RSS (% reduction)=0.657

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	2.975415e+02	9.859837e+02	1283.525201
B_o	-1.798582e+07	1.801530e+07	29481.648071
C_o	-1.005425e-01	1.010522e-01	0.000510
N_o	7.353647e-01	1.417996e+00	2.153360
F_o	-2.771446e-01	1.477611e+00	1.200466

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.16523804143094548
x: [7.672e+02 1.694e+04 ... 2.153e+00 1.200e+00]
nit: 2603
nfev: 3773
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 2.153e+00,
1.200e+00],
[7.672e+02, 1.694e+04, ..., 2.153e+00,
1.200e+00],
...,
[7.672e+02, 1.694e+04, ..., 2.153e+00,
1.200e+00],
[7.672e+02, 1.694e+04, ..., 2.153e+00,
1.200e+00]]), array([1.652e-01, 1.652e-01, ..., 1.652e-01, 1.652e-01]))

['SM data type data plots for mutation', 'Output6', 'using model:', 'model_hill.model']



time elapsed for this fit
--- 9.633846998214722 seconds ---

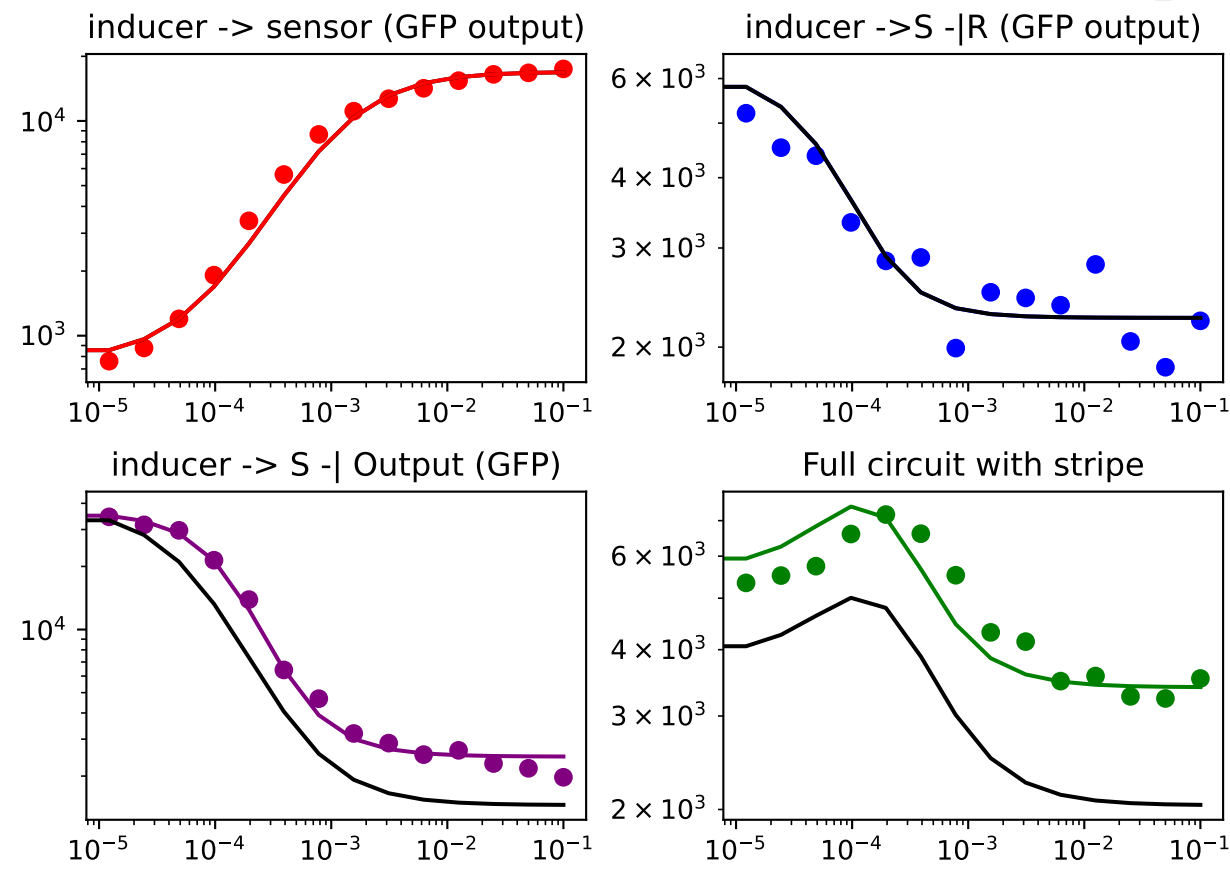
Across all four plots:

RSS (converged)=0.124
RSS (initial)=0.322
RSS (% reduction)=0.722

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	-4.342676e+01	9.859837e+02	942.556898
B_o	-1.792319e+07	1.801530e+07	92108.811496
C_o	-9.919537e-02	1.010522e-01	0.001857
N_o	2.477021e-01	1.417996e+00	1.665698
F_o	-8.848231e-02	1.477611e+00	1.389128

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.12386613056791639
x: [7.672e+02 1.694e+04 ... 1.666e+00 1.389e+00]
nit: 3284
nfev: 4692
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.666e+00, 1.389e+00],
[7.672e+02, 1.694e+04, ..., 1.666e+00, 1.389e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.666e+00, 1.389e+00],
[7.672e+02, 1.694e+04, ..., 1.666e+00, 1.389e+00]]), array([1.239e-01, 1.239e-01, ..., 1.239e-01, 1.239e-01]))

['SM data type data plots for mutation', 'Output7', 'using model:', 'model_hill.model']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 9.434121131896973 seconds ---

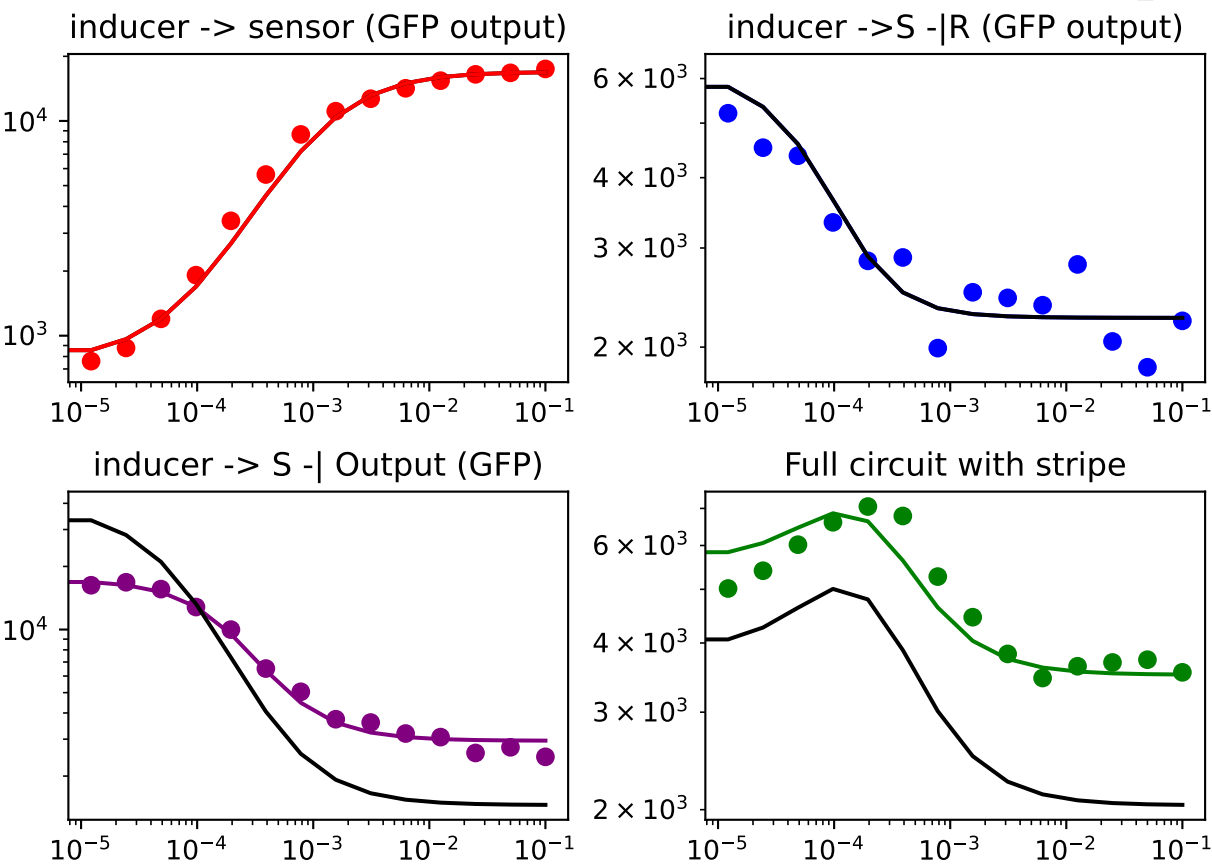
Across all four plots:

RSS (converged)=0.142
RSS (initial)=1.216
RSS (% reduction)=0.896

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	1.169018e+03	9.859837e+02	2155.001375
B_o	-1.797228e+07	1.801530e+07	43018.382100
C_o	-1.003938e-01	1.010522e-01	0.000658
N_o	6.100319e-01	1.417996e+00	2.028028
F_o	-6.455885e-02	1.477611e+00	1.413052

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.1415481451395853
x: [7.672e+02 1.694e+04 ... 2.028e+00 1.413e+00]
nit: 3280
nfev: 4668
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 2.028e+00, 1.413e+00],
[7.672e+02, 1.694e+04, ..., 2.028e+00, 1.413e+00],
...,
[7.672e+02, 1.694e+04, ..., 2.028e+00, 1.413e+00],
[7.672e+02, 1.694e+04, ..., 2.028e+00, 1.413e+00]]), array([1.415e-01, 1.415e-01, ..., 1.415e-01, 1.415e-01]))

['SM data type data plots for mutation', 'Output8', 'using model:', 'model_hill.model']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 12.116041421890259 seconds ---

Across all four plots:

RSS (converged)=0.128

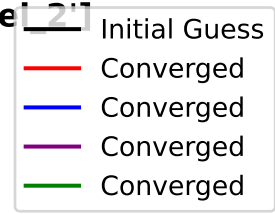
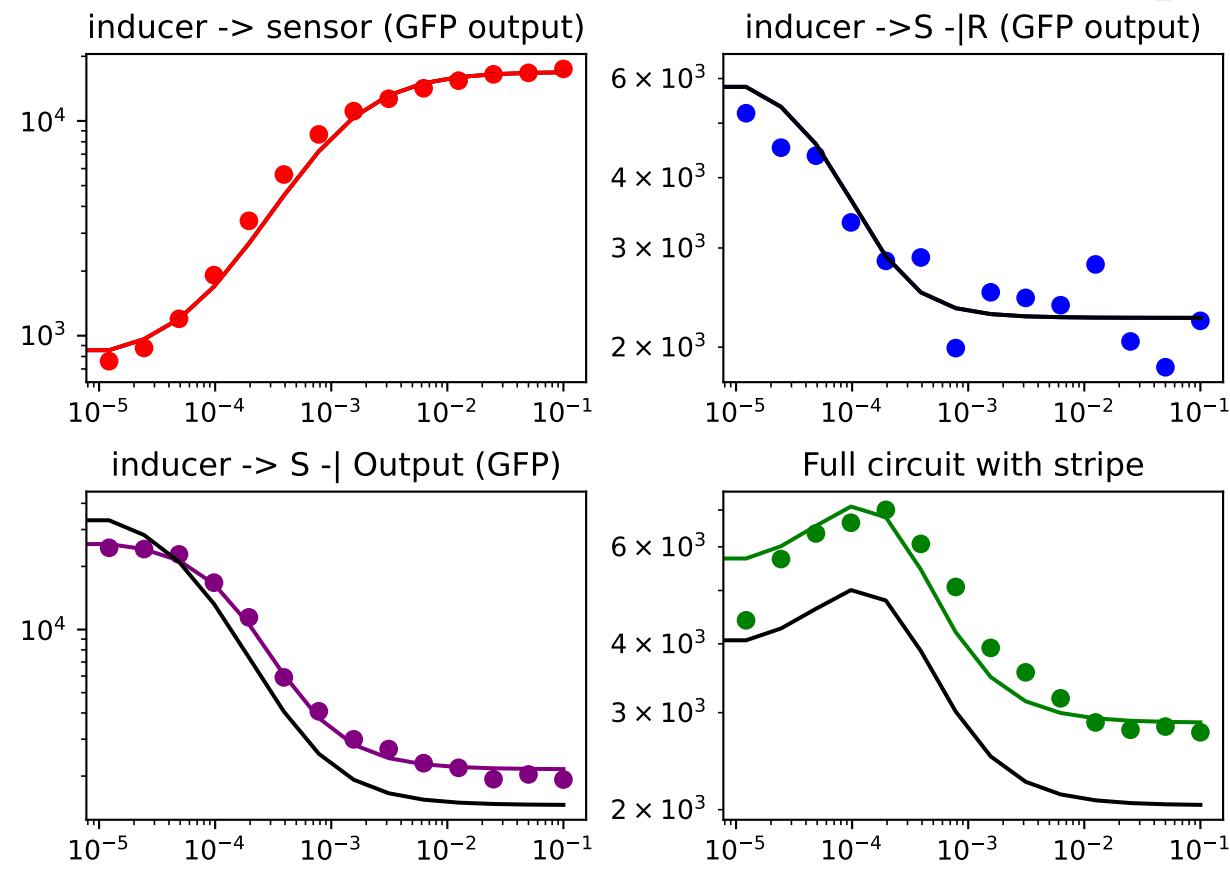
RSS (initial)=1.708

RSS (% reduction)=0.93

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	1.384565e+03	9.859837e+02	2370.548305
B_o	-1.799744e+07	1.801530e+07	17854.307122
C_o	-1.005754e-01	1.010522e-01	0.000477
N_o	2.095236e-01	1.417996e+00	1.627519
F_o	-2.454708e-01	1.477611e+00	1.232140

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.12847855119977436
x: [7.672e+02 1.694e+04 ... 1.628e+00 1.232e+00]
nit: 3534
nfev: 5020
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.628e+00,
1.232e+00],
[7.672e+02, 1.694e+04, ..., 1.628e+00,
1.232e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.628e+00,
1.232e+00],
[7.672e+02, 1.694e+04, ..., 1.628e+00,
1.232e+00]]), array([1.285e-01, 1.285e-01, ..., 1.285e-01, 1.285e-01]))

['SM data type data plots for mutation', 'Output9', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 7.300182104110718 seconds ---

Across all four plots:

RSS (converged)=0.125

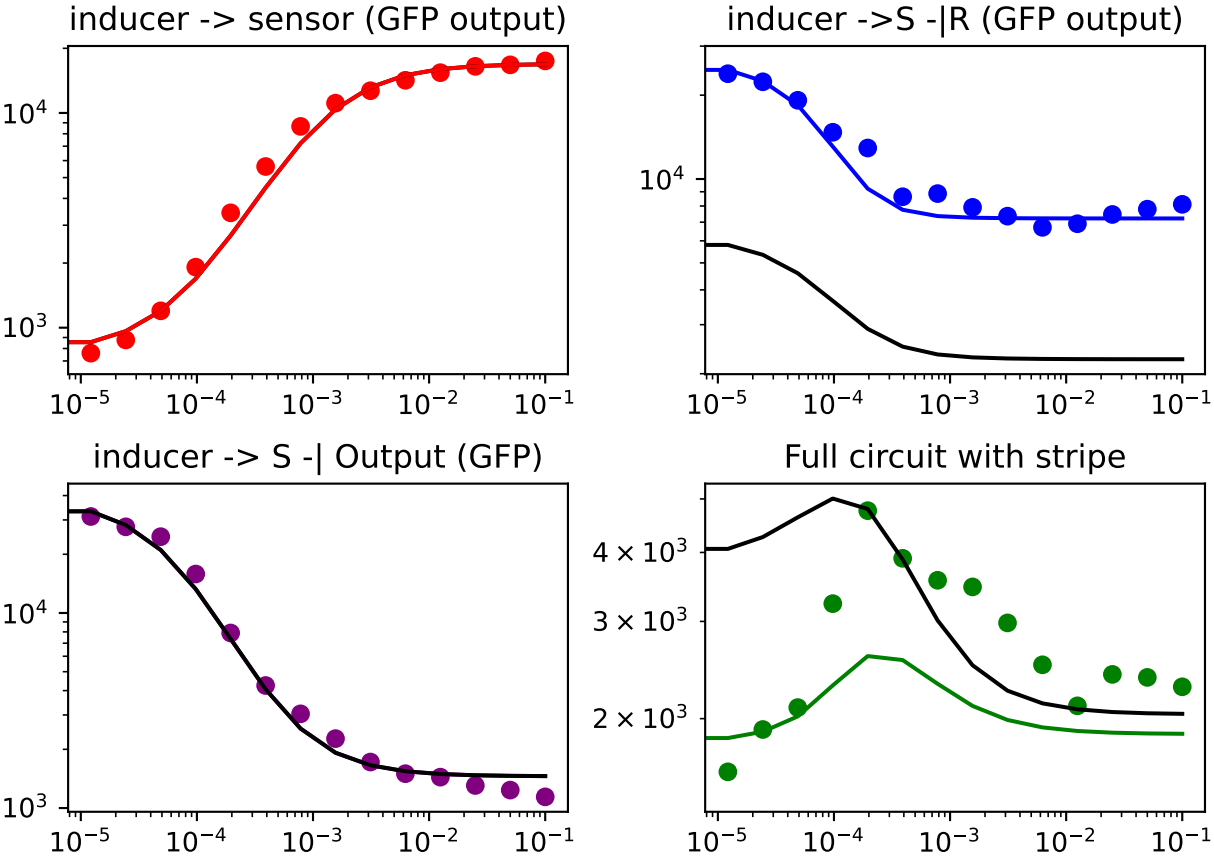
RSS (initial)=0.797

RSS (% reduction)=0.864

	epsilon	Initial_guesses	Converged
A_s	0.000000e+00	7.671584e+02	767.158409
B_s	0.000000e+00	1.694202e+04	16942.019302
C_s	0.000000e+00	8.969736e+02	896.973585
N_s	0.000000e+00	1.151182e+00	1.151182
A_r	0.000000e+00	2.229804e+03	2229.803862
B_r	0.000000e+00	8.961652e+03	8961.651645
C_r	0.000000e+00	1.461384e-03	0.001461
N_r	0.000000e+00	1.841235e+00	1.841235
A_o	6.270787e+02	9.859837e+02	1613.062324
B_o	-1.798190e+07	1.801530e+07	33401.578797
C_o	-1.003797e-01	1.010522e-01	0.000672
N_o	2.696657e-01	1.417996e+00	1.687661
F_o	-7.658866e-02	1.477611e+00	1.401022

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.12494149818944142
x: [7.672e+02 1.694e+04 ... 1.688e+00 1.401e+00]
nit: 2421
nfev: 3521
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.688e+00, 1.401e+00],
[7.672e+02, 1.694e+04, ..., 1.688e+00, 1.401e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.688e+00, 1.401e+00],
[7.672e+02, 1.694e+04, ..., 1.688e+00, 1.401e+00]]), array([1.249e-01, 1.249e-01, ..., 1.249e-01, 1.249e-01]))

['SM data type data plots for mutation', 'Regulator1', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 2.5848121643066406 seconds ---

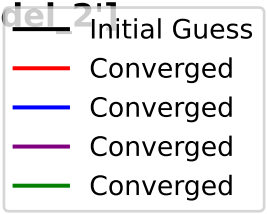
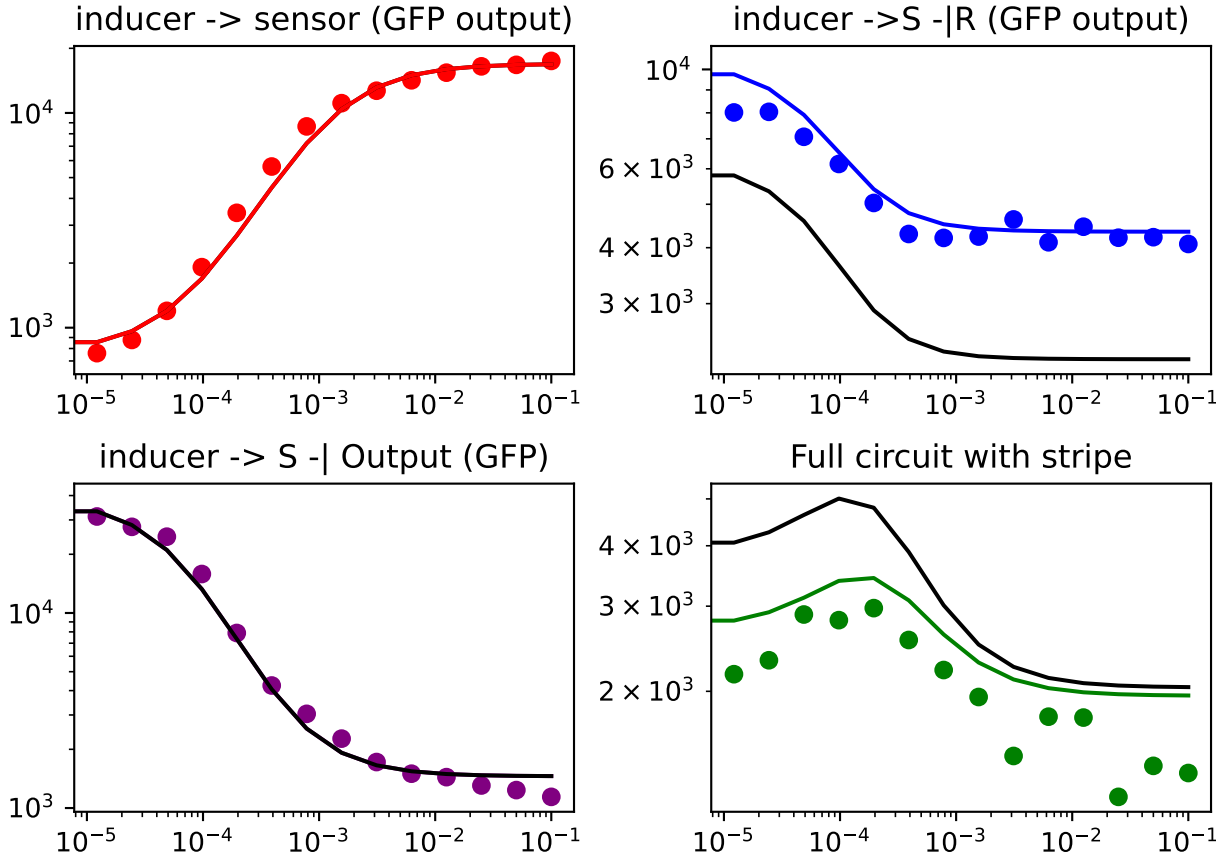
Across all four plots:

RSS (converged)=0.421
RSS (initial)=5.564
RSS (% reduction)=0.93

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	4971.184685	2.229804e+03	7.200989e+03
B_r	19677.383844	8.961652e+03	2.863904e+04
C_r	-0.000474	1.461384e-03	9.872900e-04
N_r	0.796116	1.841235e+00	2.637351e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.4209959918761989
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 730
nfev: 1206
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([4.210e-01, 4.210e-01, ..., 4.210e-01, 4.210e-01]))

['SM data type data plots for mutation', 'Regulator10', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 2.7734153270721436 seconds ---

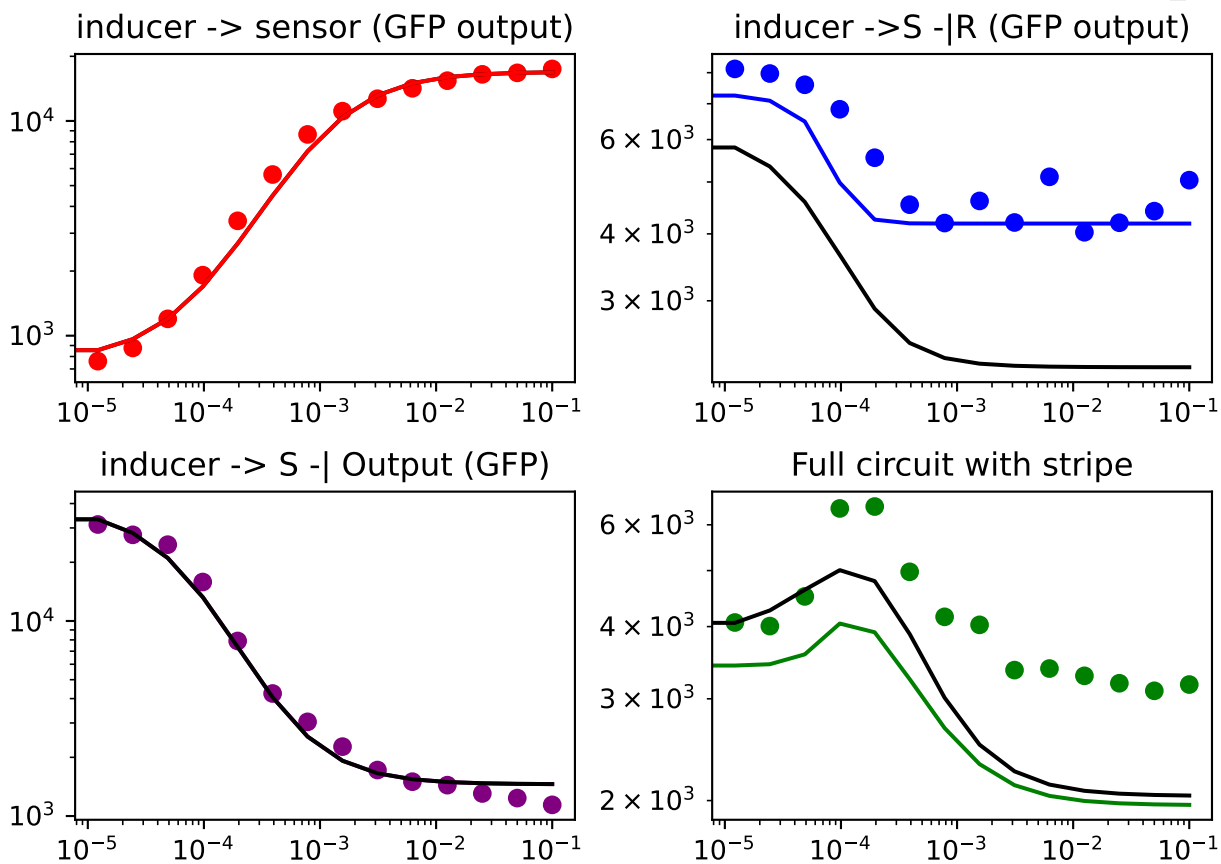
Across all four plots:

RSS (converged)=0.294
RSS (initial)=1.548
RSS (% reduction)=0.84

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	2058.038253	2.229804e+03	4.287842e+03
B_r	7528.988809	8.961652e+03	1.649064e+04
C_r	0.000312	1.461384e-03	1.773319e-03
N_r	-0.160631	1.841235e+00	1.680604e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.2943876364843967
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 727
nfev: 1217
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([2.944e-01, 2.944e-01, ..., 2.944e-01, 2.944e-01]))

['SM data type data plots for mutation', 'Regulator2', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 2.6293418407440186 seconds ---

Across all four plots:

RSS (converged)=0.646

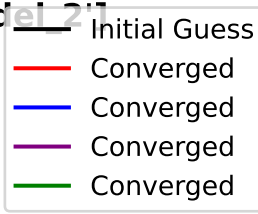
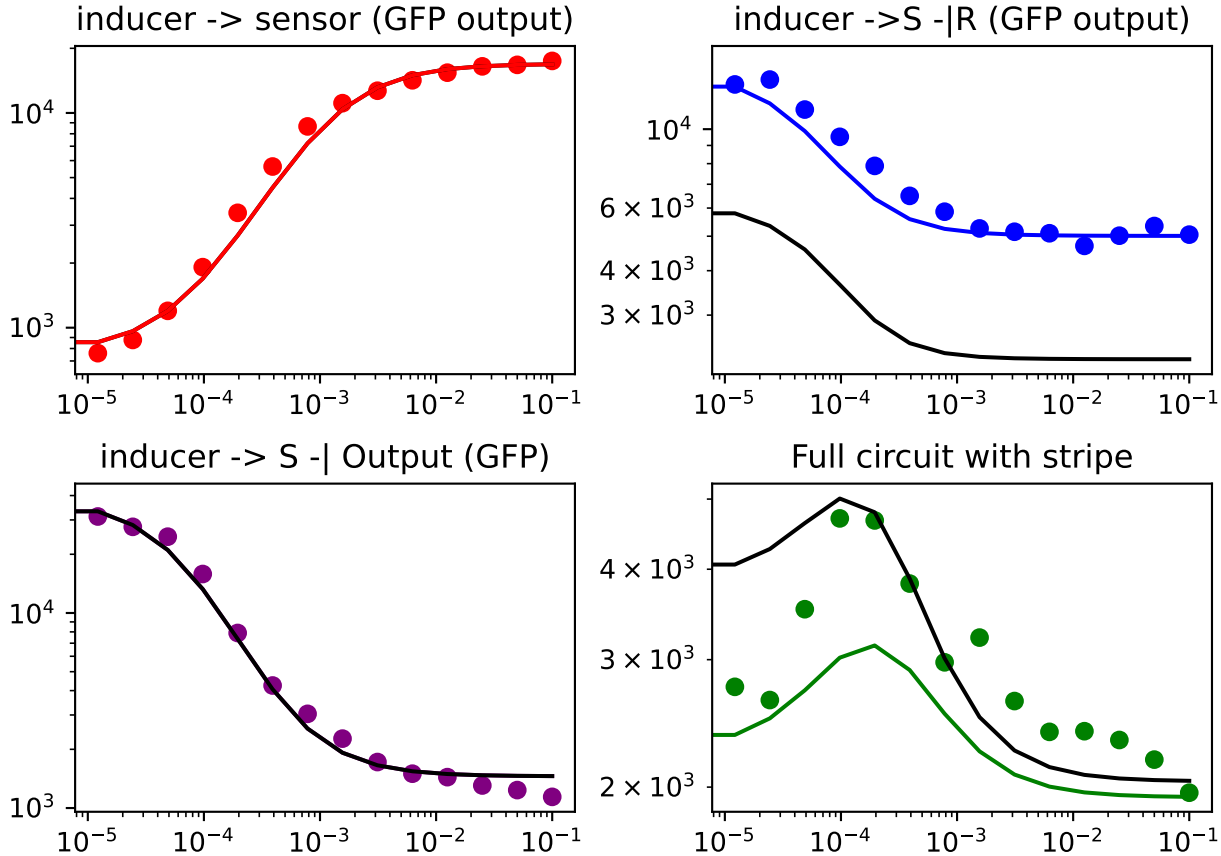
RSS (initial)=1.433

RSS (% reduction)=0.689

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	1951.598309	2.229804e+03	4.181402e+03
B_r	-5712.203274	8.961652e+03	3.249448e+03
C_r	-0.000745	1.461384e-03	7.166255e-04
N_r	3.951174	1.841235e+00	5.792409e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.6460757032617113
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 740
nfev: 1164
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([6.461e-01, 6.461e-01, ..., 6.461e-01, 6.461e-01]))

['SM data type data plots for mutation', 'Regulator3', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 273.2608609199524 seconds ---

Across all four plots:

RSS (converged)=0.282

RSS (initial)=2.401

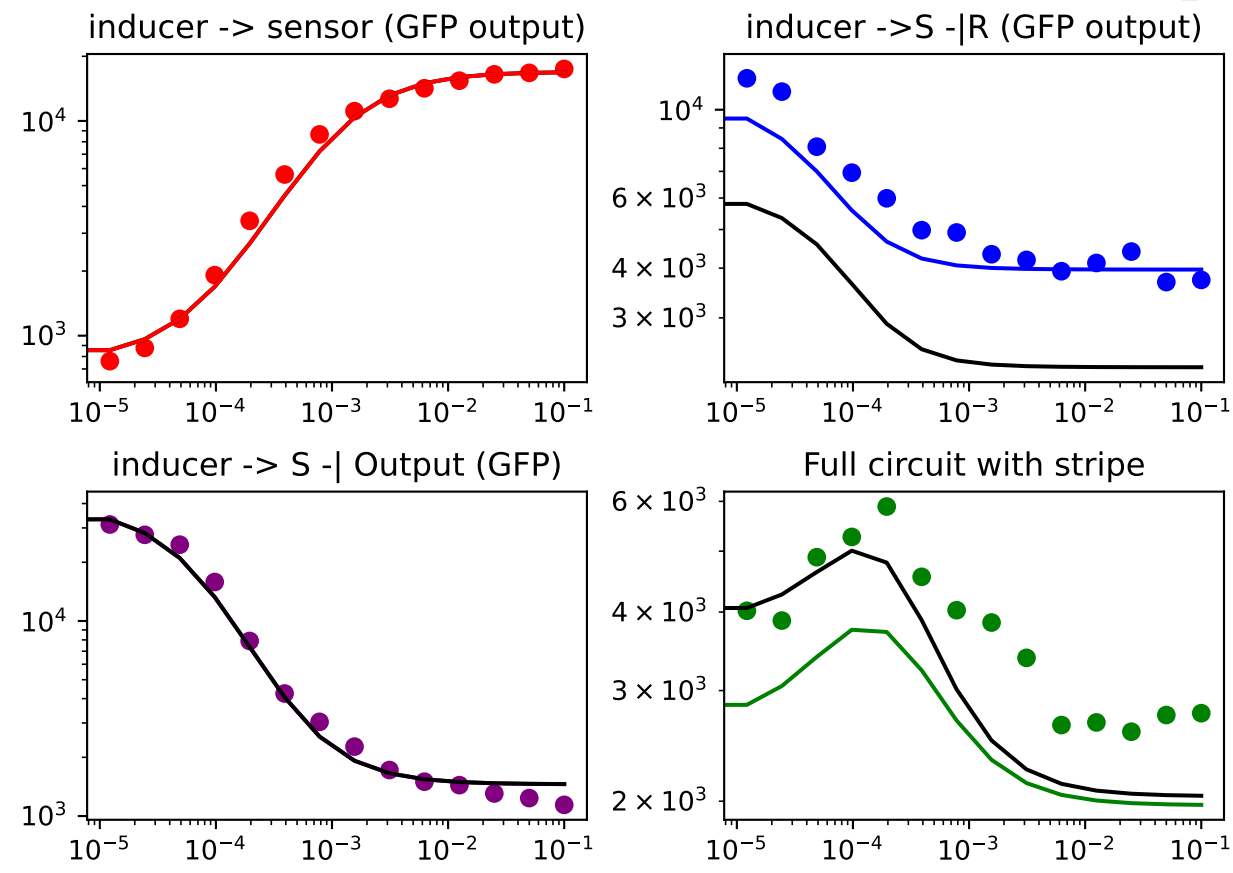
RSS (% reduction)=0.895

	epsilon	Initial guesses	Converged
A_s	0.000000e+00	7.671584e+02	7.671584e+02
B_s	0.000000e+00	1.694202e+04	1.694202e+04
C_s	0.000000e+00	8.969736e+02	8.969736e+02
N_s	0.000000e+00	1.151182e+00	1.151182e+00
A_r	2.692200e+03	2.229804e+03	4.922004e+03
B_r	1.162425e+11	8.961652e+03	1.162425e+11
C_r	5.843434e+01	1.461384e-03	5.843581e+01
N_r	-3.199413e-01	1.841235e+00	1.521294e+00
A_o	0.000000e+00	9.859837e+02	9.859837e+02
B_o	0.000000e+00	1.801530e+07	1.801530e+07
C_o	0.000000e+00	1.010522e-01	1.010522e-01
N_o	0.000000e+00	1.417996e+00	1.417996e+00
F_o	0.000000e+00	1.477611e+00	1.477611e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2

fun: 0.2817353484152031
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 100000
nfev: 135548
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([2.817e-01, 2.817e-01, ..., 2.817e-01, 2.817e-01]))

['SM data type data plots for mutation', 'Regulator4', 'using model:', 'model_hill.model_2']



- Initial Guess
- Converged
- Converged
- Converged
- Converged

time elapsed for this fit
--- 131.4553599357605 seconds ---

Across all four plots:

RSS (converged)=0.522

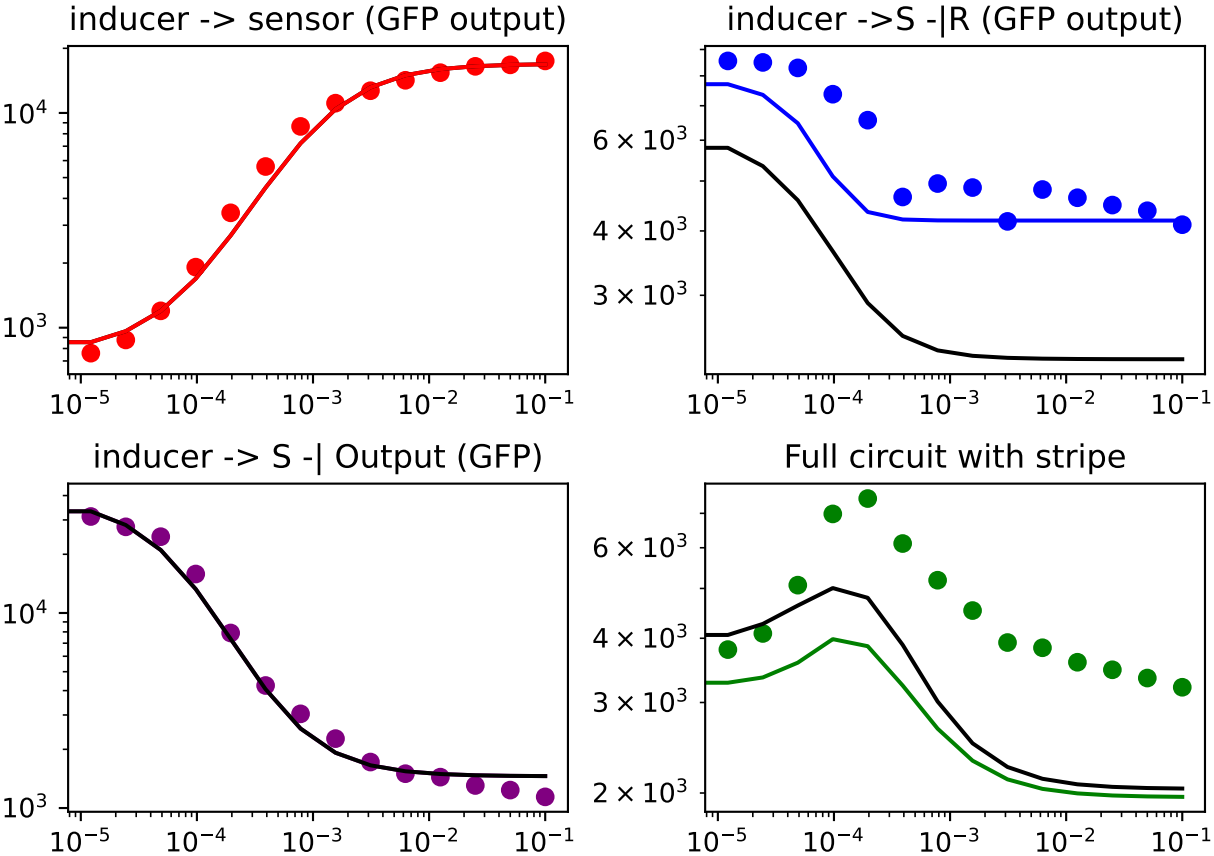
RSS (initial)=1.425

RSS (% reduction)=0.732

	epsilon	Initial guesses	Converged
A_s	0.000000e+00	7.671584e+02	7.671584e+02
B_s	0.000000e+00	1.694202e+04	1.694202e+04
C_s	0.000000e+00	8.969736e+02	8.969736e+02
N_s	0.000000e+00	1.151182e+00	1.151182e+00
A_r	1.709504e+03	2.229804e+03	3.939308e+03
B_r	1.470210e+10	8.961652e+03	1.470210e+10
C_r	4.636301e+00	1.461384e-03	4.637762e+00
N_r	-5.674730e-02	1.841235e+00	1.784488e+00
A_o	0.000000e+00	9.859837e+02	9.859837e+02
B_o	0.000000e+00	1.801530e+07	1.801530e+07
C_o	0.000000e+00	1.010522e-01	1.010522e-01
N_o	0.000000e+00	1.417996e+00	1.417996e+00
F_o	0.000000e+00	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.5217621691986053
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 47868
nfev: 65519
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([5.218e-01, 5.218e-01, ..., 5.218e-01, 5.218e-01]))

['SM data type data plots for mutation', 'Regulator5', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 3.2962968349456787 seconds ---

Across all four plots:

RSS (converged)=0.97

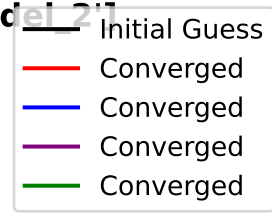
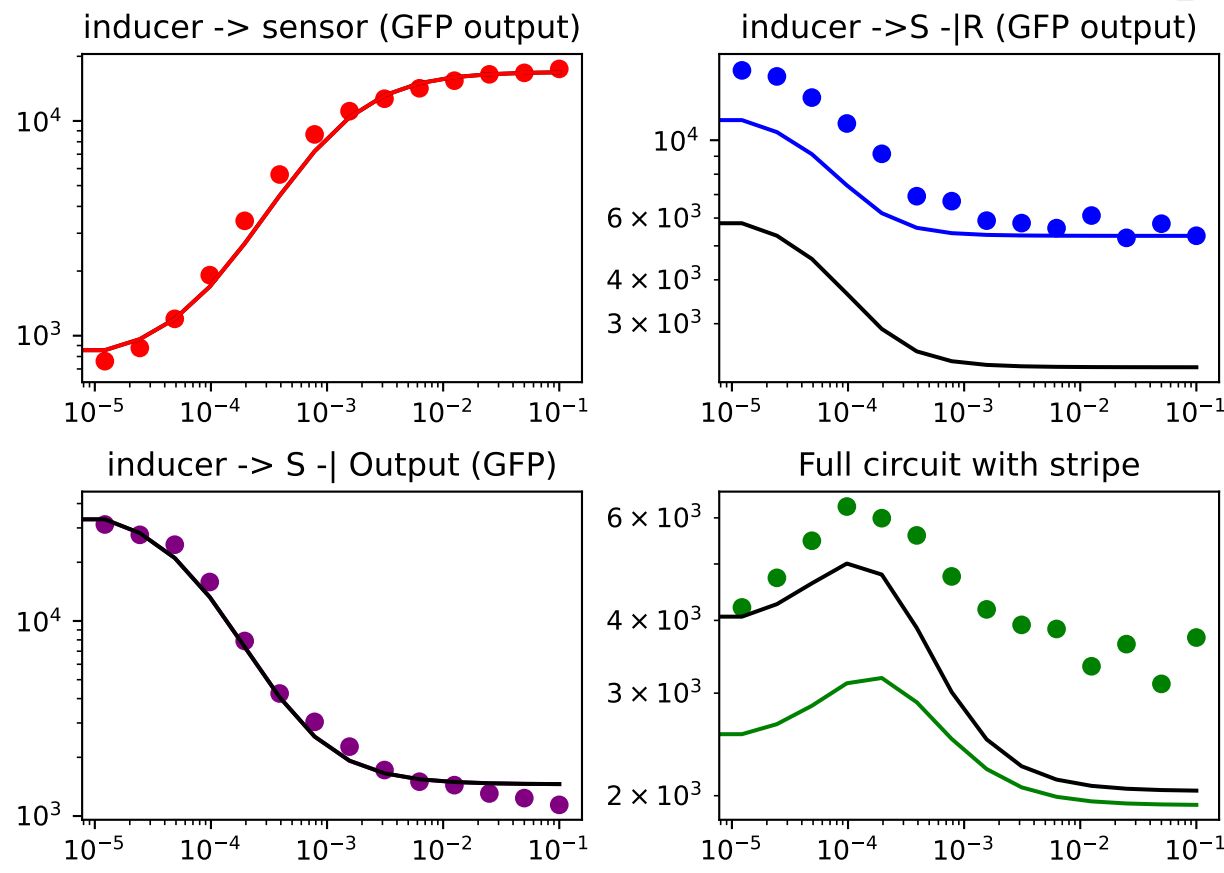
RSS (initial)=1.796

RSS (% reduction)=0.649

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	1959.973096	2.229804e+03	4.189777e+03
B_r	-4675.099827	8.961652e+03	4.286552e+03
C_r	-0.000652	1.461384e-03	8.098044e-04
N_r	2.307065	1.841235e+00	4.148300e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.9695273337857131
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 966
nfev: 1513
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00,
1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00,
1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00,
1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00,
1.478e+00]]), array([9.695e-01, 9.695e-01, ..., 9.695e-01, 9.695e-01]))

['SM data type data plots for mutation', 'Regulator6', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 2.637524366378784 seconds ---

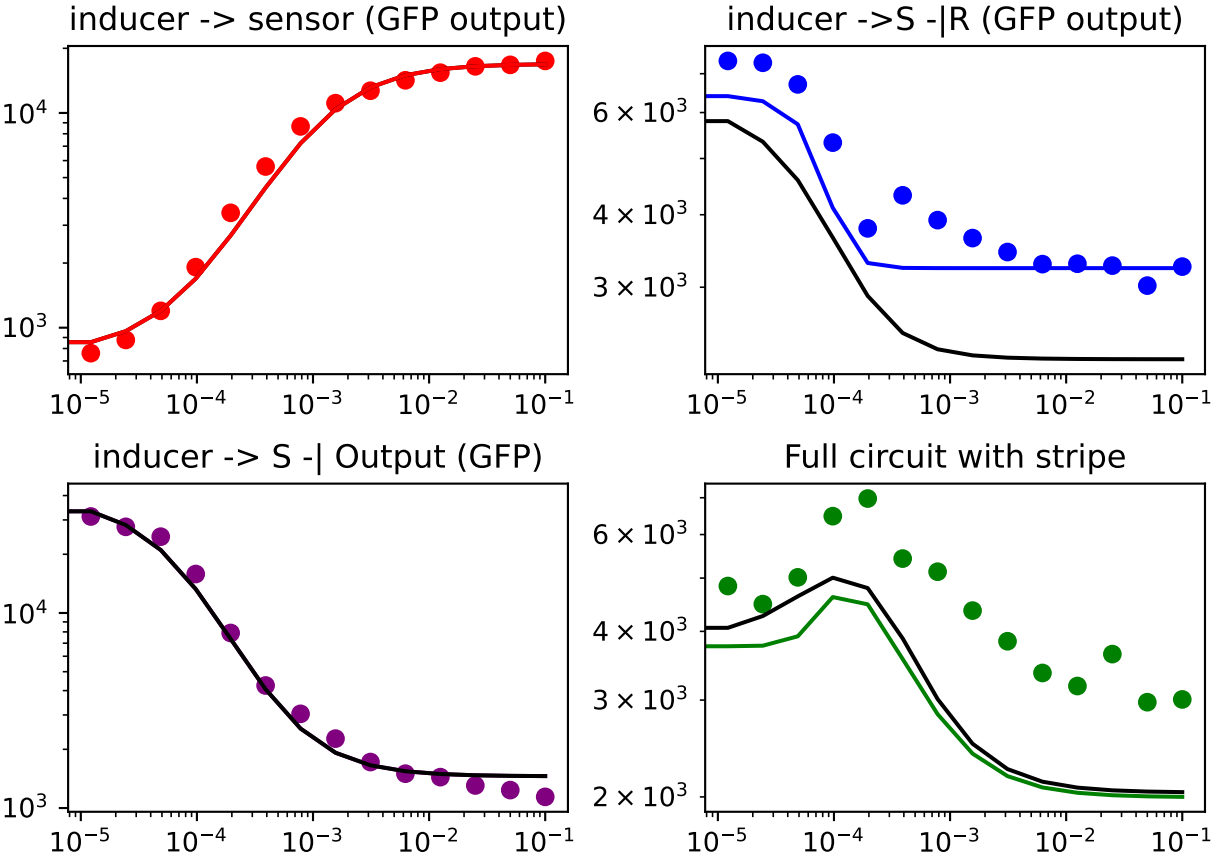
Across all four plots:

RSS (converged)=1.321
RSS (initial)=3.343
RSS (% reduction)=0.717

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	3089.351494	2.229804e+03	5.319155e+03
B_r	5664.594019	8.961652e+03	1.462625e+04
C_r	-0.000091	1.461384e-03	1.370507e-03
N_r	0.270151	1.841235e+00	2.111386e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 1.3206644976486281
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 731
nfev: 1208
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([1.321e+00, 1.321e+00, ..., 1.321e+00, 1.321e+00]))

['SM data type data plots for mutation', 'Regulator7', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 2.390552520751953 seconds ---

Across all four plots:

RSS (converged)=0.67

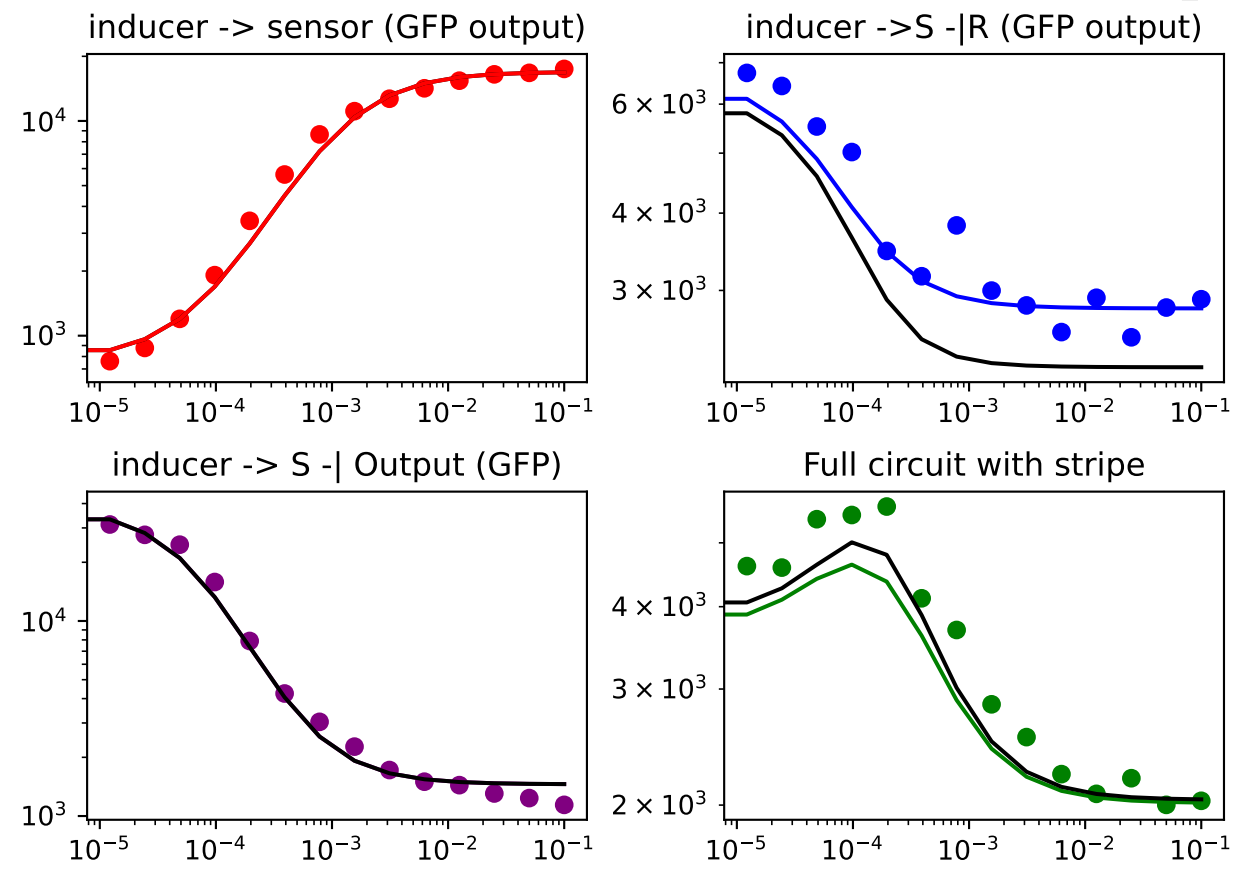
RSS (initial)=0.912

RSS (% reduction)=0.577

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	1006.430813	2.229804e+03	3.236235e+03
B_r	-5665.609507	8.961652e+03	3.296042e+03
C_r	-0.000765	1.461384e-03	6.965211e-04
N_r	4.356414	1.841235e+00	6.197649e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.6695777358833469
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 684
nfev: 1106
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([6.696e-01, 6.696e-01, ..., 6.696e-01, 6.696e-01]))

['SM data type data plots for mutation', 'Regulator8', 'using model:', 'model_hill.model_2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 272.6839907169342 seconds ---

Across all four plots:

RSS (converged)=0.178

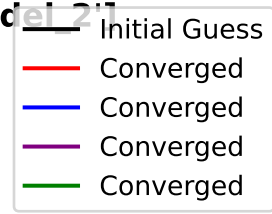
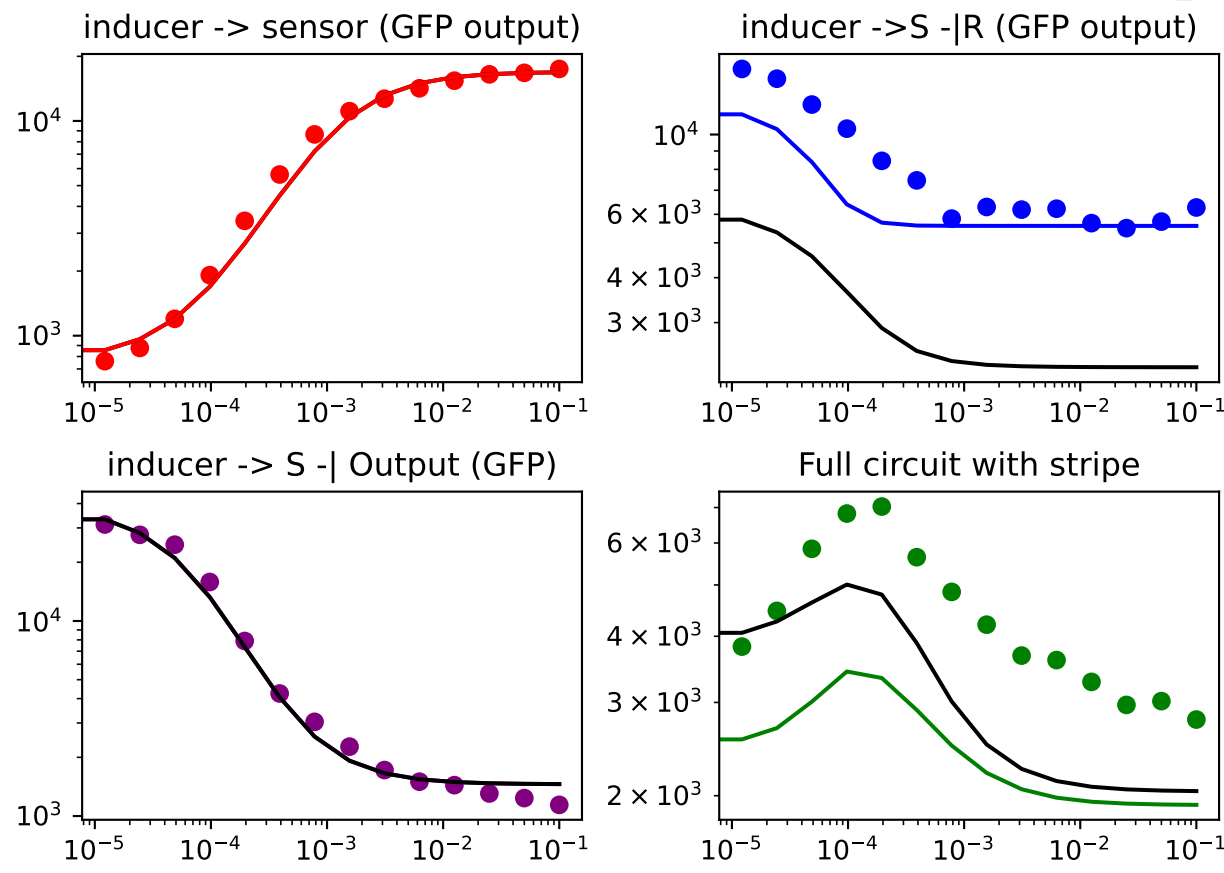
RSS (initial)=0.278

RSS (% reduction)=0.61

	epsilon	Initial guesses	Converged
A_s	0.000000e+00	7.671584e+02	7.671584e+02
B_s	0.000000e+00	1.694202e+04	1.694202e+04
C_s	0.000000e+00	8.969736e+02	8.969736e+02
N_s	0.000000e+00	1.151182e+00	1.151182e+00
A_r	5.158649e+02	2.229804e+03	2.745669e+03
B_r	9.988869e+10	8.961652e+03	9.988870e+10
C_r	4.005903e+02	1.461384e-03	4.005917e+02
N_r	-4.914605e-01	1.841235e+00	1.349775e+00
A_o	0.000000e+00	9.859837e+02	9.859837e+02
B_o	0.000000e+00	1.801530e+07	1.801530e+07
C_o	0.000000e+00	1.010522e-01	1.010522e-01
N_o	0.000000e+00	1.417996e+00	1.417996e+00
F_o	0.000000e+00	1.477611e+00	1.477611e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.17809920023171708
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 100000
nfev: 135259
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([1.781e-01, 1.781e-01, ..., 1.781e-01, 1.781e-01]))

['SM data type data plots for mutation', 'Regulator9', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 2.4788529872894287 seconds ---

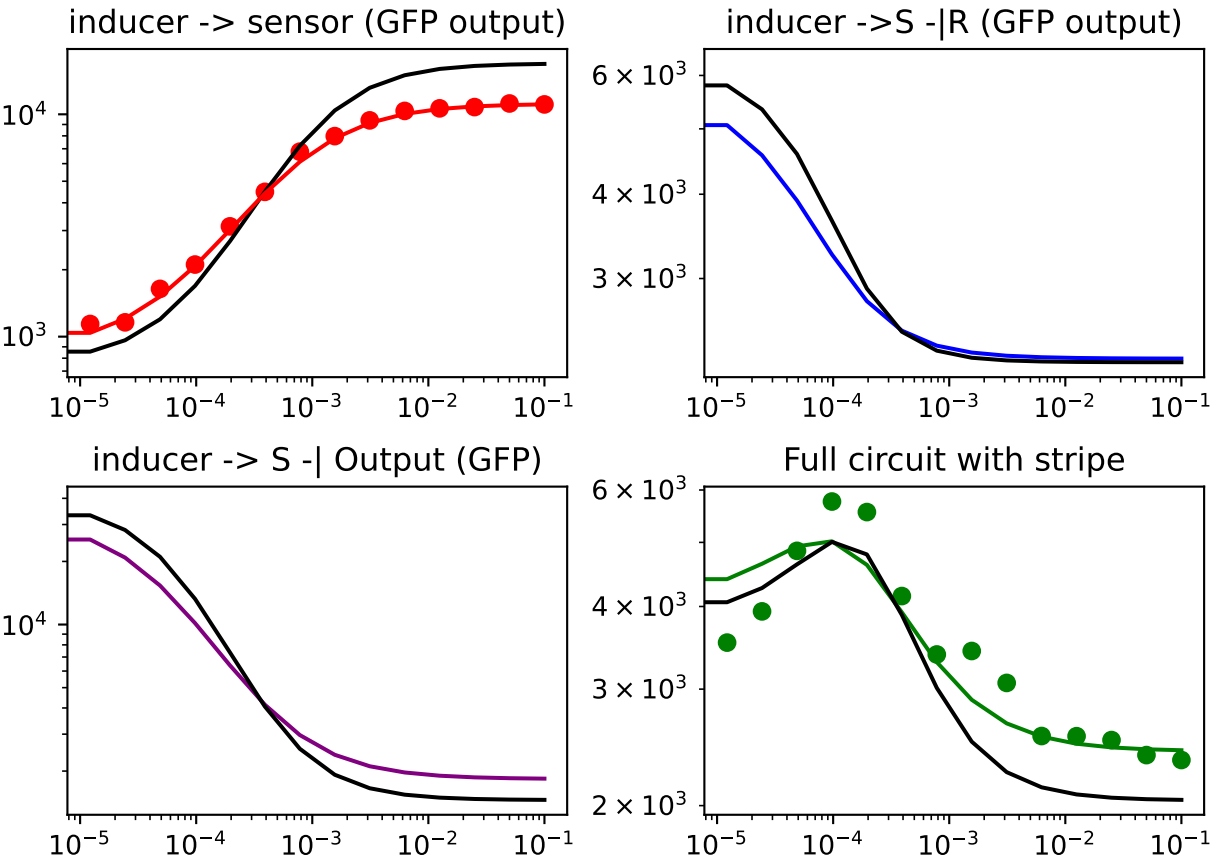
Across all four plots:

RSS (converged)=1.179
RSS (initial)=3.202
RSS (% reduction)=0.731

	epsilon	Initial_guesses	Converged
A_s	0.000000	7.671584e+02	7.671584e+02
B_s	0.000000	1.694202e+04	1.694202e+04
C_s	0.000000	8.969736e+02	8.969736e+02
N_s	0.000000	1.151182e+00	1.151182e+00
A_r	3341.935043	2.229804e+03	5.571739e+03
B_r	-494.664549	8.961652e+03	8.466987e+03
C_r	-0.000483	1.461384e-03	9.786954e-04
N_r	2.577861	1.841235e+00	4.419096e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 1.178703198639715
x: [7.672e+02 1.694e+04 ... 1.418e+00 1.478e+00]
nit: 708
nfev: 1159
final_simplex: (array([[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00],
[7.672e+02, 1.694e+04, ..., 1.418e+00, 1.478e+00]]), array([1.179e+00, 1.179e+00, ..., 1.179e+00, 1.179e+00]))

['SM data type data plots for mutation', 'Sensor1', 'using model:', 'model_hill.mode1.2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 1.748542070388794 seconds ---

Across all four plots:

RSS (converged)=0.041

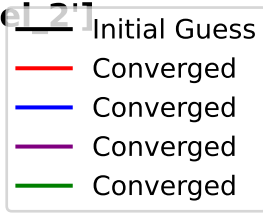
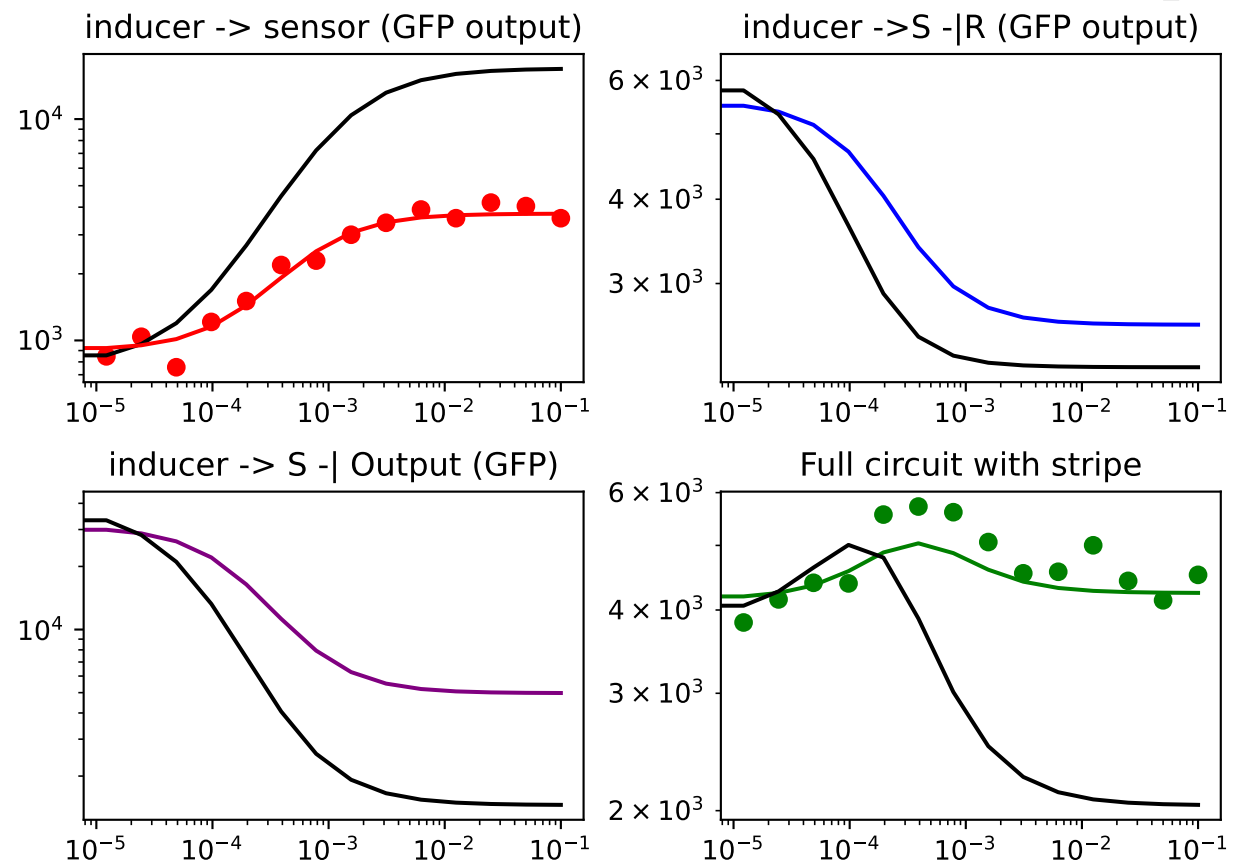
RSS (initial)=0.333

RSS (% reduction)=0.889

	epsilon	Initial_guesses	Converged
A_s	100.520236	7.671584e+02	8.676786e+02
B_s	-5775.749187	1.694202e+04	1.116627e+04
C_s	434.895348	8.969736e+02	1.331869e+03
N_s	-0.162488	1.151182e+00	9.886938e-01
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.041462560638407565
x: [8.677e+02 1.117e+04 ... 1.418e+00 1.478e+00]
nit: 551
nfev: 911
final_simplex: (array([[8.677e+02, 1.117e+04, ..., 1.418e+00,
1.478e+00],
[8.677e+02, 1.117e+04, ..., 1.418e+00,
1.478e+00],
...,
[8.677e+02, 1.117e+04, ..., 1.418e+00,
1.478e+00],
[8.677e+02, 1.117e+04, ..., 1.418e+00,
1.478e+00]]), array([4.146e-02, 4.146e-02, ..., 4.146e-02, 4.146e-02]))

['SM data type data plots for mutation', 'Sensor10', 'using model:', 'model_hill.model_2']



time elapsed for this fit
--- 2.352107048034668 seconds ---

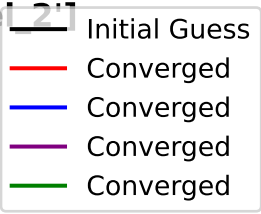
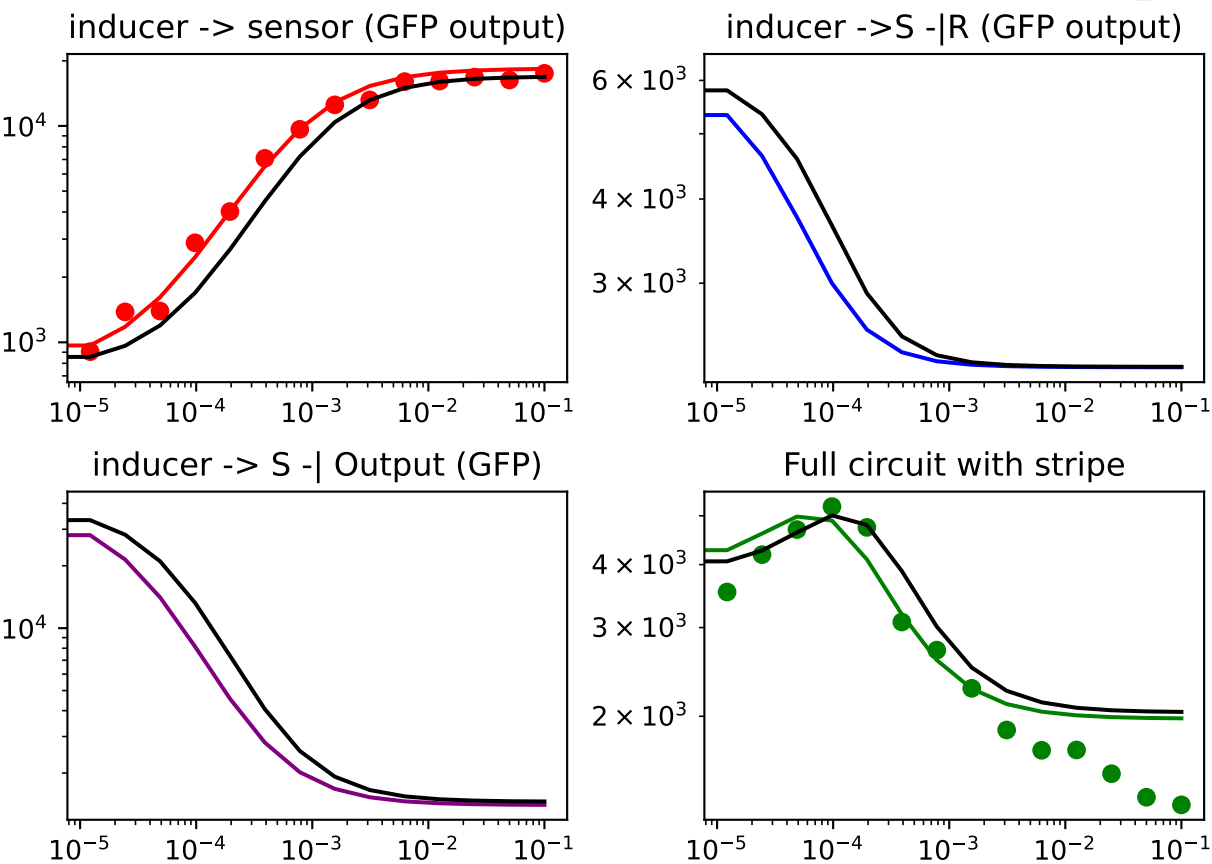
Across all four plots:

RSS (converged)=0.066
RSS (initial)=3.971
RSS (% reduction)=0.984

	epsilon	Initial_guesses	Converged
A_s	136.900582	7.671584e+02	9.040590e+02
B_s	-13201.519671	1.694202e+04	3.740500e+03
C_s	716.831410	8.969736e+02	1.613805e+03
N_s	0.112362	1.151182e+00	1.263544e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.06611949331732757
x: [9.041e+02 3.740e+03 ... 1.418e+00 1.478e+00]
nit: 700
nfev: 1119
final_simplex: (array([[9.041e+02, 3.740e+03, ..., 1.418e+00, 1.478e+00],
[9.041e+02, 3.740e+03, ..., 1.418e+00, 1.478e+00],
...,
[9.041e+02, 3.740e+03, ..., 1.418e+00, 1.478e+00],
[9.041e+02, 3.740e+03, ..., 1.418e+00, 1.478e+00]]), array([6.612e-02, 6.612e-02, ..., 6.612e-02, 6.612e-02]))

['SM data type data plots for mutation', 'Sensor2', 'using model:', 'model_hill.mode', '2']



time elapsed for this fit
--- 1.6907358169555664 seconds ---

Across all four plots:

RSS (converged)=0.127

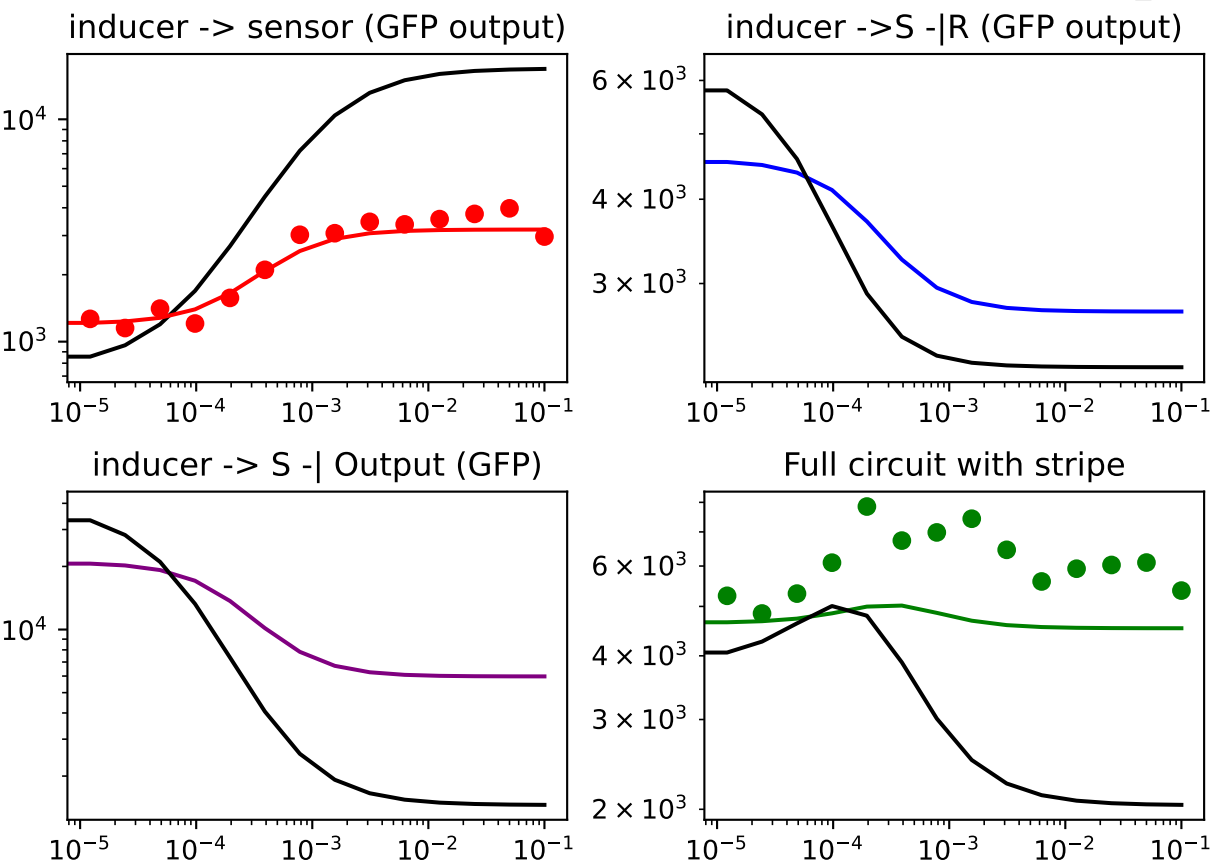
RSS (initial)=0.303

RSS (% reduction)=0.705

	epsilon	Initial_guesses	Converged
A_s	6.506405	7.671584e+02	7.736648e+02
B_s	1490.646430	1.694202e+04	1.843267e+04
C_s	409.562647	8.969736e+02	1.306536e+03
N_s	-0.063136	1.151182e+00	1.088046e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.1271318193588478
x: [7.737e+02 1.843e+04 ... 1.418e+00 1.478e+00]
nit: 510
nfev: 871
final_simplex: (array([[7.737e+02, 1.843e+04, ..., 1.418e+00, 1.478e+00],
[7.737e+02, 1.843e+04, ..., 1.418e+00, 1.478e+00],
...,
[7.737e+02, 1.843e+04, ..., 1.418e+00, 1.478e+00],
[7.737e+02, 1.843e+04, ..., 1.418e+00, 1.478e+00]]), array([1.271e-01, 1.271e-01, ..., 1.271e-01, 1.271e-01]))

['SM data type data plots for mutation', 'Sensor3', 'using model:', 'model_hill.mode



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 2.3653995990753174 seconds ---

Across all four plots:

RSS (converged)=0.259

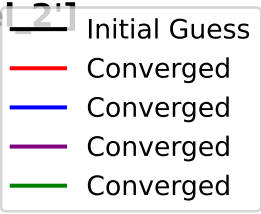
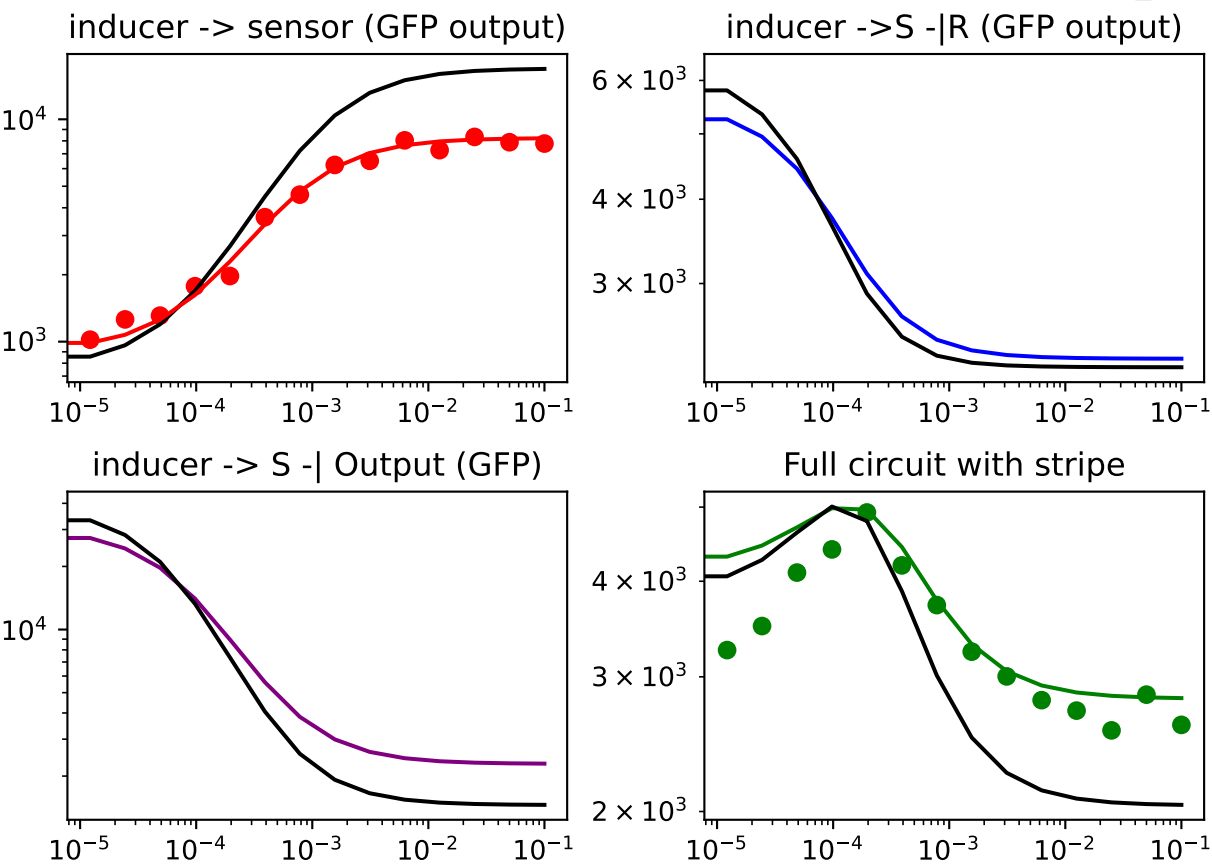
RSS (initial)=4.943

RSS (% reduction)=0.95

	epsilon	Initial_guesses	Converged
A_s	436.434164	7.671584e+02	1.203593e+03
B_s	-13748.335677	1.694202e+04	3.193684e+03
C_s	1264.227984	8.969736e+02	2.161202e+03
N_s	0.282671	1.151182e+00	1.433853e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.2585560366602706
x: [1.204e+03 3.194e+03 ... 1.418e+00 1.478e+00]
nit: 797
nfev: 1245
final_simplex: (array([[1.204e+03, 3.194e+03, ..., 1.418e+00,
1.478e+00],
[1.204e+03, 3.194e+03, ..., 1.418e+00,
1.478e+00],
...,
[1.204e+03, 3.194e+03, ..., 1.418e+00,
1.478e+00],
[1.204e+03, 3.194e+03, ..., 1.418e+00,
1.478e+00]]), array([2.586e-01, 2.586e-01, ..., 2.586e-01, 2.586e-01]))

['SM data type data plots for mutation', 'Sensor4', 'using model:', 'model_hill.mode



time elapsed for this fit
--- 1.6830847263336182 seconds ---

Across all four plots:

RSS (converged)=0.077

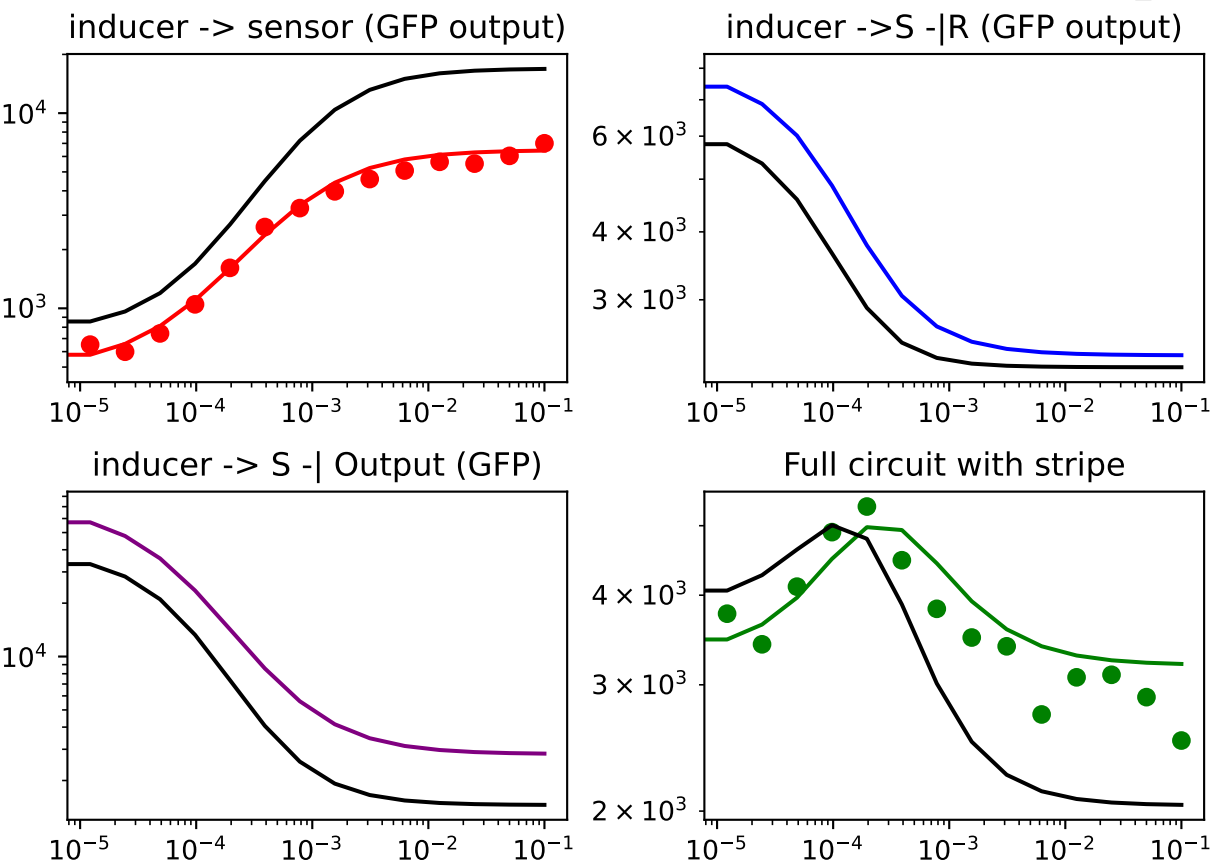
RSS (initial)=0.887

RSS (% reduction)=0.92

	epsilon	Initial_guesses	Converged
A_s	143.635099	7.671584e+02	9.107935e+02
B_s	-8696.580256	1.694202e+04	8.245439e+03
C_s	491.003253	8.969736e+02	1.387977e+03
N_s	-0.033331	1.151182e+00	1.117851e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.07737684756345134
x: [9.108e+02 8.245e+03 ... 1.418e+00 1.478e+00]
nit: 543
nfev: 885
final_simplex: (array([[9.108e+02, 8.245e+03, ..., 1.418e+00,
1.478e+00],
[9.108e+02, 8.245e+03, ..., 1.418e+00,
1.478e+00],
...,
[9.108e+02, 8.245e+03, ..., 1.418e+00,
1.478e+00],
[9.108e+02, 8.245e+03, ..., 1.418e+00,
1.478e+00]]), array([7.738e-02, 7.738e-02, ..., 7.738e-02, 7.738e-02]))

['SM data type data plots for mutation', 'Sensor5', 'using model:', 'model_hill.mode1-2']



Initial Guess
Converged
Converged
Converged
Converged

time elapsed for this fit
--- 2.0435919761657715 seconds ---

Across all four plots:

RSS (converged)=0.061

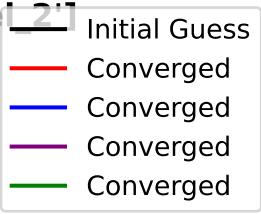
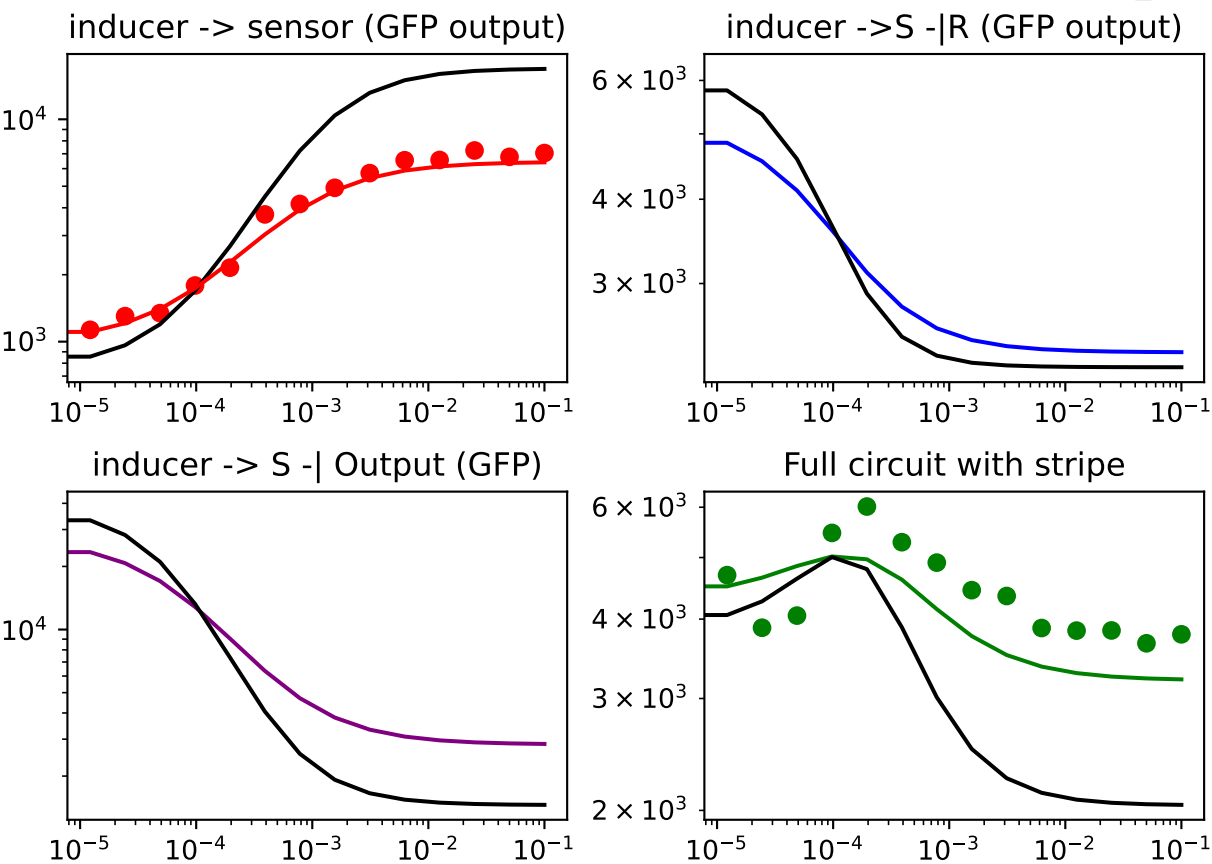
RSS (initial)=1.971

RSS (% reduction)=0.97

	epsilon	Initial_guesses	Converged
A_s	-268.089001	7.671584e+02	4.990694e+02
B_s	-10465.722652	1.694202e+04	6.476297e+03
C_s	293.923648	8.969736e+02	1.190897e+03
N_s	-0.132535	1.151182e+00	1.018647e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.060732462719036075
x: [4.991e+02 6.476e+03 ... 1.418e+00 1.478e+00]
nit: 665
nfev: 1060
final_simplex: (array([[4.991e+02, 6.476e+03, ..., 1.418e+00,
1.478e+00],
[4.991e+02, 6.476e+03, ..., 1.418e+00,
1.478e+00],
...,
[4.991e+02, 6.476e+03, ..., 1.418e+00,
1.478e+00],
[4.991e+02, 6.476e+03, ..., 1.418e+00,
1.478e+00]]), array([6.073e-02, 6.073e-02, ..., 6.073e-02, 6.073e-02]))

['SM data type data plots for mutation', 'Sensor6', 'using model:', 'model_hill.mode', '2']



time elapsed for this fit
--- 2.3706929683685303 seconds ---

Across all four plots:

RSS (converged)=0.087

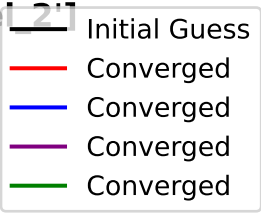
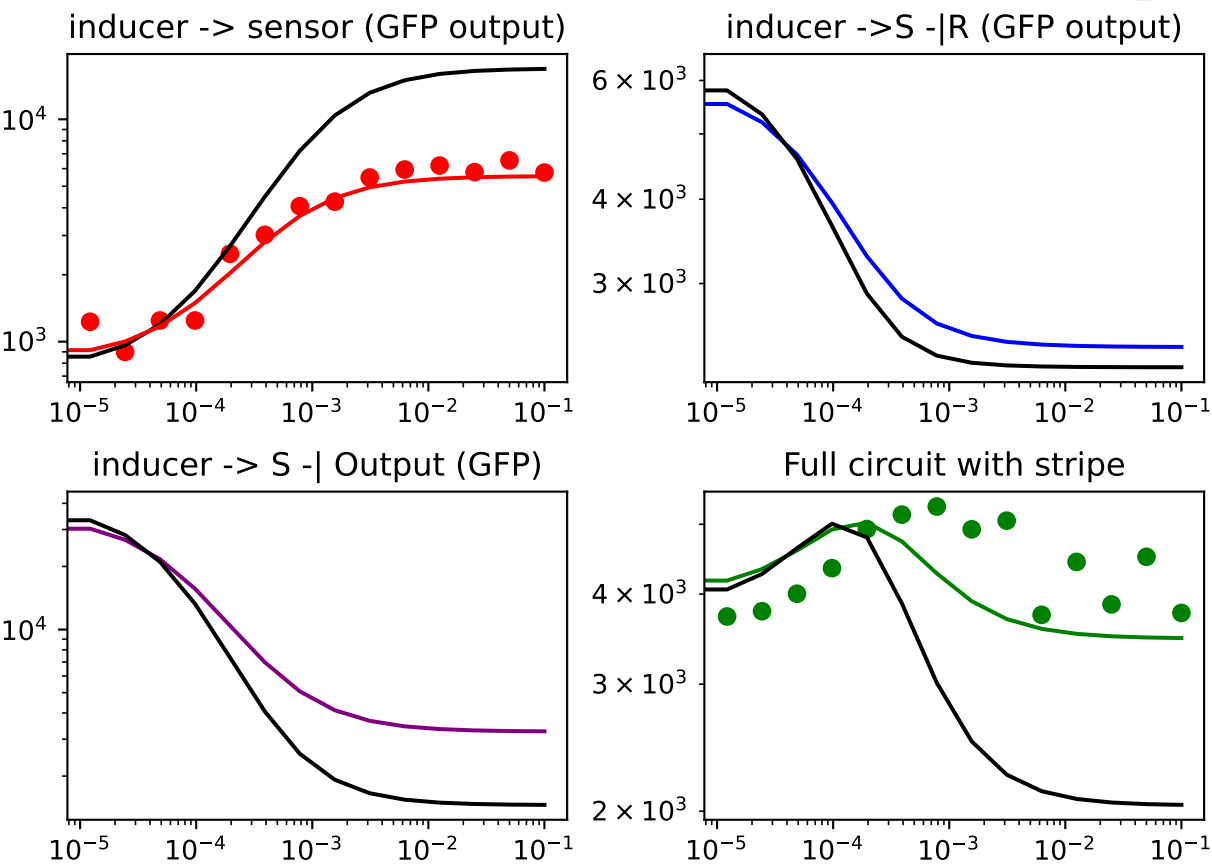
RSS (initial)=1.639

RSS (% reduction)=0.95

	epsilon	Initial_guesses	Converged
A_s	224.811131	7.671584e+02	9.919695e+02
B_s	-10494.738818	1.694202e+04	6.447280e+03
C_s	603.840269	8.969736e+02	1.500814e+03
N_s	-0.189418	1.151182e+00	9.617639e-01
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.086714777993115805
x: [9.920e+02 6.447e+03 ... 1.418e+00 1.478e+00]
nit: 638
nfev: 1050
final_simplex: (array([[9.920e+02, 6.447e+03, ..., 1.418e+00, 1.478e+00],
[9.920e+02, 6.447e+03, ..., 1.418e+00, 1.478e+00],
...,
[9.920e+02, 6.447e+03, ..., 1.418e+00, 1.478e+00],
[9.920e+02, 6.447e+03, ..., 1.418e+00, 1.478e+00]]), array([8.671e-02, 8.671e-02, ..., 8.671e-02, 8.671e-02]))

['SM data type data plots for mutation', 'Sensor7', 'using model:', 'model_hill.mode



time elapsed for this fit
--- 2.254927158355713 seconds ---

Across all four plots:

RSS (converged)=0.134

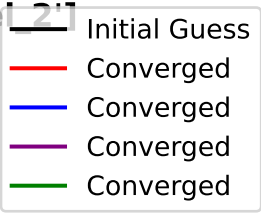
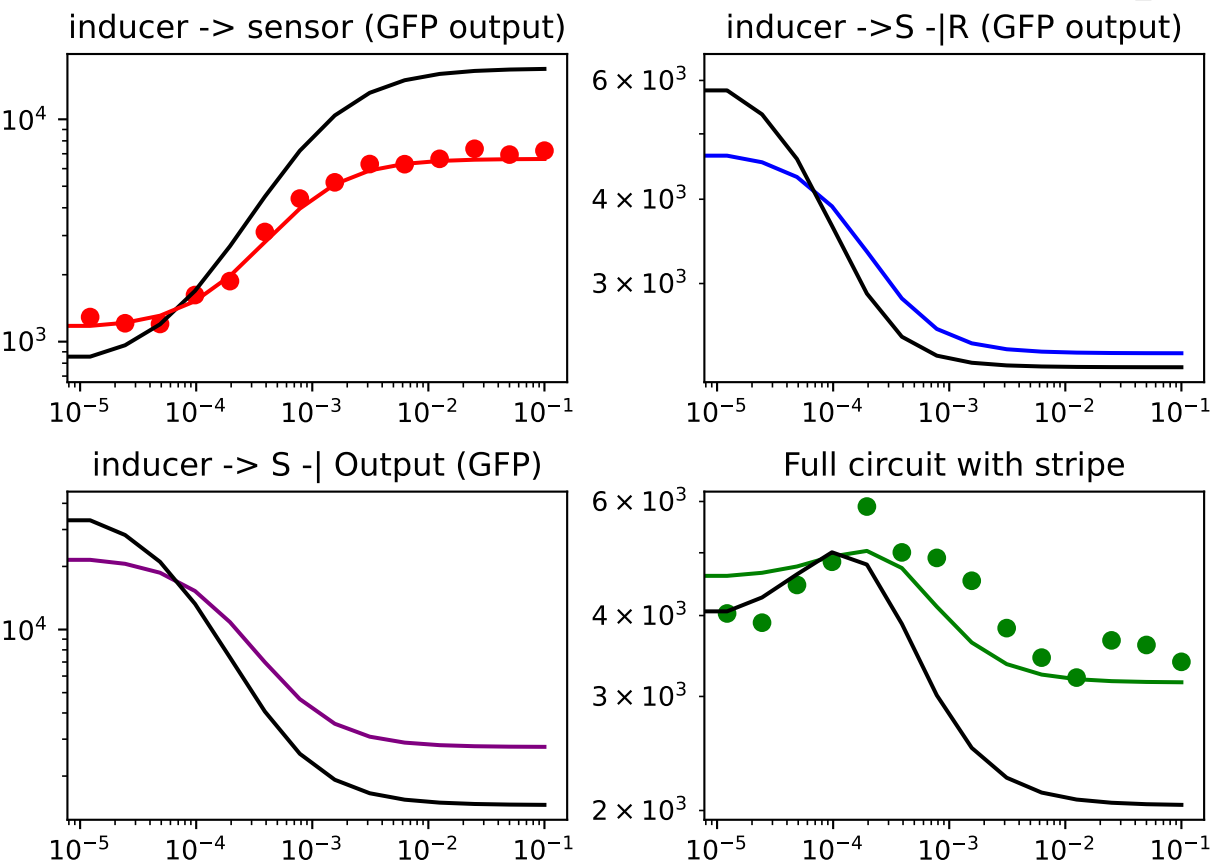
RSS (initial)=2.09

RSS (% reduction)=0.94

	epsilon	Initial guesses	Converged
A_s	68.722869	7.671584e+02	8.358813e+02
B_s	-11381.331706	1.694202e+04	5.560688e+03
C_s	979.765947	8.969736e+02	1.876740e+03
N_s	-0.075522	1.151182e+00	1.075659e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.1336791505996799
x: [8.359e+02 5.561e+03 ... 1.418e+00 1.478e+00]
nit: 598
nfev: 996
final_simplex: (array([[8.359e+02, 5.561e+03, ..., 1.418e+00,
1.478e+00],
[8.359e+02, 5.561e+03, ..., 1.418e+00,
1.478e+00],
...,
[8.359e+02, 5.561e+03, ..., 1.418e+00,
1.478e+00],
[8.359e+02, 5.561e+03, ..., 1.418e+00,
1.478e+00]]), array([1.337e-01, 1.337e-01, ..., 1.337e-01, 1.337e-01]))

['SM data type data plots for mutation', 'Sensor8', 'using model:', 'model_hill.mode



time elapsed for this fit
--- 1.9389078617095947 seconds ---

Across all four plots:

RSS (converged)=0.073

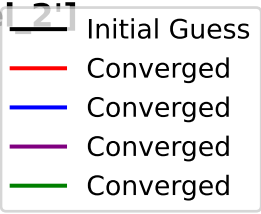
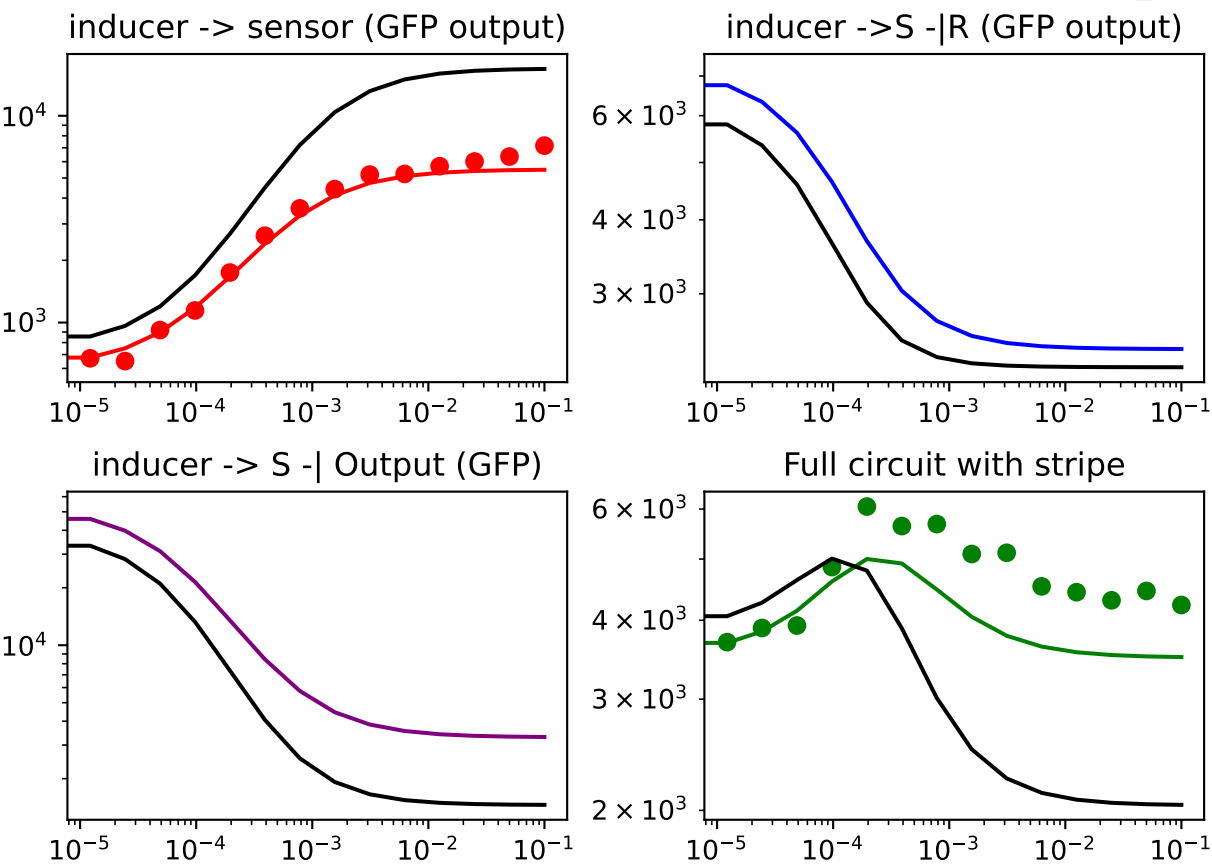
RSS (initial)=1.524

RSS (% reduction)=0.954

	epsilon	Initial_guesses	Converged
A_s	383.154356	7.671584e+02	1.150313e+03
B_s	-10301.730938	1.694202e+04	6.640288e+03
C_s	435.001847	8.969736e+02	1.331975e+03
N_s	0.136864	1.151182e+00	1.288046e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.07324489706829068
x: [1.150e+03 6.640e+03 ... 1.418e+00 1.478e+00]
nit: 588
nfev: 960
final_simplex: (array([[1.150e+03, 6.640e+03, ..., 1.418e+00, 1.478e+00],
[1.150e+03, 6.640e+03, ..., 1.418e+00, 1.478e+00],
...,
[1.150e+03, 6.640e+03, ..., 1.418e+00, 1.478e+00],
[1.150e+03, 6.640e+03, ..., 1.418e+00, 1.478e+00]]), array([7.324e-02, 7.324e-02, ..., 7.324e-02, 7.324e-02]))

['SM data type data plots for mutation', 'Sensor9', 'using model:', 'model_hill.mode



time elapsed for this fit
--- 2.286790132522583 seconds ---

Across all four plots:

RSS (converged)=0.125

RSS (initial)=2.365

RSS (% reduction)=0.95

	epsilon	Initial_guesses	Converged
A_s	-159.188101	7.671584e+02	6.079703e+02
B_s	-11438.182130	1.694202e+04	5.503837e+03
C_s	641.316139	8.969736e+02	1.538290e+03
N_s	-0.082694	1.151182e+00	1.068488e+00
A_r	0.000000	2.229804e+03	2.229804e+03
B_r	0.000000	8.961652e+03	8.961652e+03
C_r	0.000000	1.461384e-03	1.461384e-03
N_r	0.000000	1.841235e+00	1.841235e+00
A_o	0.000000	9.859837e+02	9.859837e+02
B_o	0.000000	1.801530e+07	1.801530e+07
C_o	0.000000	1.010522e-01	1.010522e-01
N_o	0.000000	1.417996e+00	1.417996e+00
F_o	0.000000	1.477611e+00	1.477611e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.1250224476433861
x: [6.080e+02 5.504e+03 ... 1.418e+00 1.478e+00]
nit: 761
nfev: 1192
final_simplex: (array([[6.080e+02, 5.504e+03, ..., 1.418e+00, 1.478e+00],
[6.080e+02, 5.504e+03, ..., 1.418e+00, 1.478e+00],
...,
[6.080e+02, 5.504e+03, ..., 1.418e+00, 1.478e+00],
[6.080e+02, 5.504e+03, ..., 1.418e+00, 1.478e+00]]), array([1.250e-01, 1.250e-01, ..., 1.250e-01, 1.250e-01]))