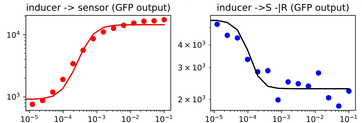
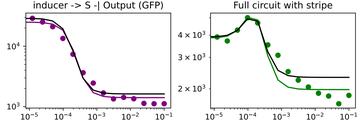
['SM data type data plots for mutation', 'Output1', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 5.284466981887817 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.28

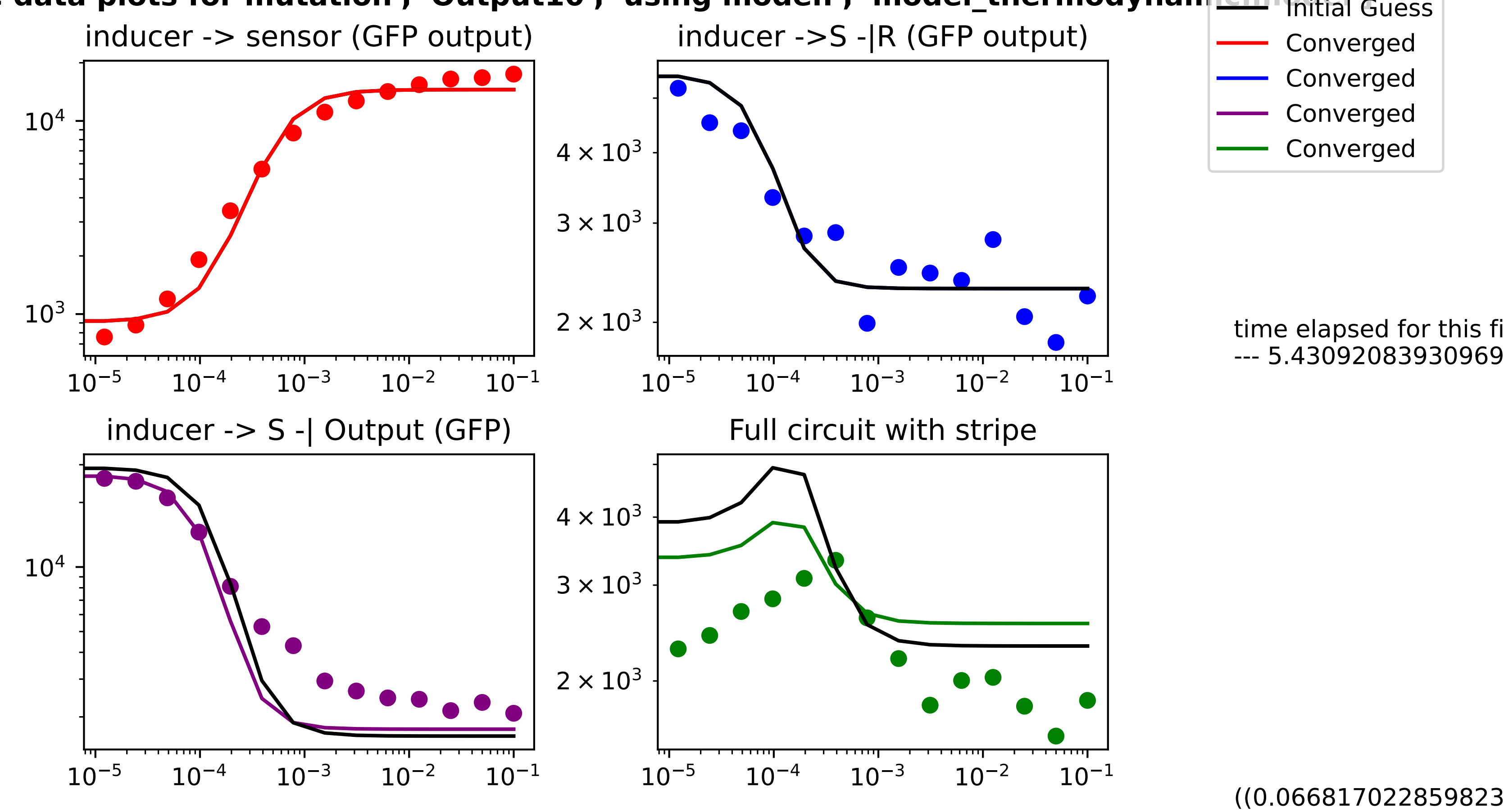
RSS (initial)=0.355

RSS (% reduction)=0.559

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	2.191634e+11	2.011834e+12	2.230997e+12
C_pl	2.552535e-03	1.968035e-02	2.223289e-02
K_l	-5.230096e-07	1.281986e-06	7.589769e-07
A_o	-5.013232e+04	1.760143e+05	1.258820e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.2801420792501725
x: [6.682e-02 5.467e-07 ... 1.259e+05 1.483e+00]
nit: 679
nfev: 1493
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.259e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.259e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.259e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.259e+05,
1.483e+00]]), array([2.801e-01, 2.801e-01, ..., 2.801e-01, 2.801e-01]))

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



time elapsed for this fit
--- 5.430920839309692 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.836

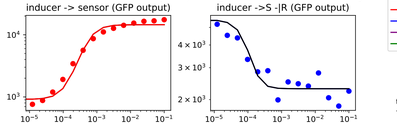
RSS (initial)=0.966

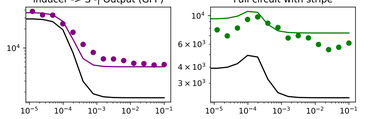
RSS (% reduction)=0.536

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	8.868474e+11	2.011834e+12	2.898681e+12
C_pl	-1.009821e-02	1.968035e-02	9.582141e-03
K_l	5.001693e-06	1.281986e-06	6.283679e-06
A_o	2.492876e+05	1.760143e+05	4.253020e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
      message: Optimization terminated successfully.
      success: True
       status: 0
          fun: 0.8362687838685726
            x: [ 6.682e-02  5.467e-07 ...  4.253e+05  1.483e+00]
          nit: 860
         nfev: 1711
final_simplex: (array([[ 6.682e-02,  5.467e-07, ...,  4.253e+05,
                         1.483e+00],
                       [ 6.682e-02,  5.467e-07, ...,  4.253e+05,
                         1.483e+00],
                       ...,
                       [ 6.682e-02,  5.467e-07, ...,  4.253e+05,
                         1.483e+00],
                       [ 6.682e-02,  5.467e-07, ...,  4.253e+05,
                         1.483e+00]]), array([ 8.363e-01,  8.363e-01, ...,  8.363e-01,  8.363e-01]))
```

['SM data type data plots for mutation', 'Output2', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 4618.540817737579 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.387

RSS (initial)=5.466

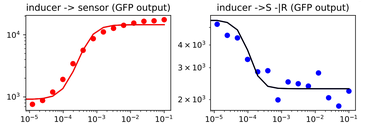
RSS (% reduction)=0.934

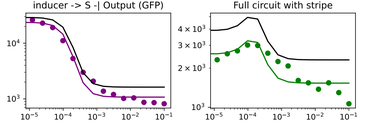
	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	3.616012e+10	2.011834e+12	2.047994e+12
C_pl	4.268049e-02	1.968035e-02	6.236084e-02
K_l	-3.094920e-07	1.281986e-06	9.724944e-07
A_o	1.686267e+04	1.760143e+05	1.928770e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.929e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.929e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.929e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.929e+05,
1.483e+00]]), array([3.871e-01, 3.871e-01, ..., 3.871e-01, 3.871e-01]))

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.3870850639581207
x: [6.682e-02 5.467e-07 ... 1.929e+05 1.483e+00]
nit: 100000
nfev: 1587242

['SM data type data plots for mutation', 'Output3', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 5.626234292984009 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.367

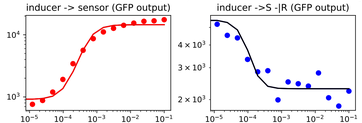
RSS (initial)=1.22

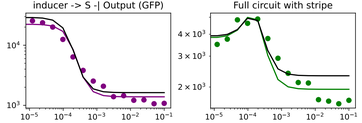
RSS (% reduction)=0.769

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	4.846772e+12	2.011834e+12	6.858606e+12
C_pl	-7.101350e-03	1.968035e-02	1.257900e-02
K_l	7.961744e-07	1.281986e-06	2.078161e-06
A_o	6.323937e+03	1.760143e+05	1.823383e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.3669977142488007 3
x: [6.682e-02 5.467e-07 ... 1.823e+05 1.483e+00]
nit: 799
nfev: 1667
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.823e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.823e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.823e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.823e+05,
1.483e+00]]), array([3.670e-01, 3.670e-01, ..., 3.670e-01, 3.670e-01]))

['SM data type data plots for mutation', 'Output4', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 2597.797854423523 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.337

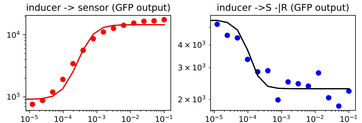
RSS (initial)=0.46

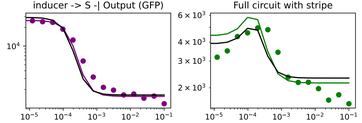
RSS (% reduction)=0.577

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	3.571222e+11	2.011834e+12	2.368956e+12
C_pl	6.012485e-03	1.968035e-02	2.569284e-02
K_l	-6.545504e-07	1.281986e-06	6.274360e-07
A_o	-6.976217e+04	1.760143e+05	1.062522e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.063e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.063e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.063e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.063e+05,
1.483e+00]]), array([3.365e-01, 3.365e-01, ..., 3.365e-01, 3.365e-01]))
message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.3365005289051945
x: [6.682e-02 5.467e-07 ... 1.063e+05 1.483e+00]
nit: 100000
nfev: 895019

['SM data type data plots for mutation', 'Output5', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 5093.6289348602295 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.432

RSS (initial)=0.483

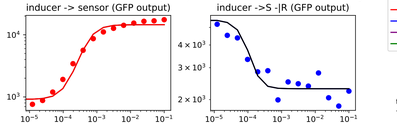
RSS (% reduction)=0.528

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	1.247629e+12	2.011834e+12	3.259463e+12
C_pl	4.696987e-03	1.968035e-02	2.437734e-02
K_l	-6.854919e-07	1.281986e-06	5.964946e-07
A_o	-5.427957e+04	1.760143e+05	1.217348e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.217e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.217e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.217e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.217e+05,
1.483e+00]]), array([4.321e-01, 4.321e-01, ..., 4.321e-01, 4.321e-01]))

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.432050219865 1043
x: [6.682e-02 5.467e-07 ... 1.217e+05 1.483e+00]
nit: 100000
nfev: 1590213

['SM data type data plots for mutation', 'Output6', 'using model:', 'model_thermodynam



time elapsed for this fit
--- 4.517261505126953 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.321

RSS (initial)=0.511

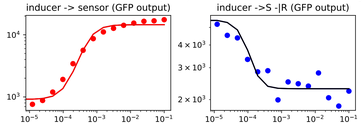
RSS (% reduction)=0.614

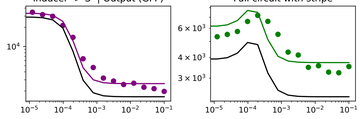
	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	-3.426787e+11	2.011834e+12	1.669155e+12
C_pl	-4.242628e-03	1.968035e-02	1.543773e-02
K_l	2.950148e-07	1.281986e-06	1.577001e-06
A_o	5.291545e+03	1.760143e+05	1.813059e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.813e+05,
        1.483e+00],
       [6.682e-02, 5.467e-07, ..., 1.813e+05,
        1.483e+00],
       ...,
       [6.682e-02, 5.467e-07, ..., 1.813e+05,
        1.483e+00],
       [6.682e-02, 5.467e-07, ..., 1.813e+05,
        1.483e+00]]), array([3.212e-01, 3.212e-01, ..., 3.212e-01, 3.212e-01]))

message: Optimization terminated successfully.
success: True
 status: 0
    fun: 0.3212036515433301
      x: [6.682e-02 5.467e-07 ... 1.813e+05 1.483e+00]
   nit: 714
  nfev: 1561

['SM data type data plots for mutation', 'Output7', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 4430.188621044159 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.297

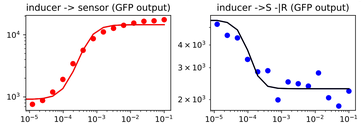
RSS (initial)=1.339

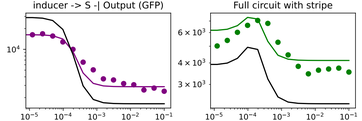
RSS (% reduction)=0.819

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	3.308801e+11	2.011834e+12	2.342714e+12
C_pl	1.435867e-02	1.968035e-02	3.403903e-02
K_l	-5.353867e-07	1.281986e-06	7.465998e-07
A_o	-1.084973e+04	1.760143e+05	1.651646e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.2968106026821374
x: [6.682e-02 5.467e-07 ... 1.652e+05 1.483e+00]
nit: 100000
nfev: 1589938
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.652e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.652e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.652e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.652e+05,
1.483e+00]]), array([2.968e-01, 2.968e-01, ..., 2.968e-01, 2.968e-01]))

['SM data type data plots for mutation', 'Output8', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 5.563560485839844 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.299

RSS (initial)=1.825

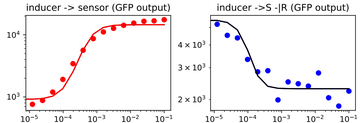
RSS (% reduction)=0.859

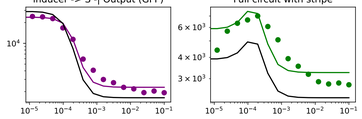
	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	4.934783e+12	2.011834e+12	6.946617e+12
C_pl	8.015194e-02	1.968035e-02	9.983229e-02
K_l	-9.885549e-07	1.281986e-06	2.934316e-07
A_o	-1.102847e+05	1.760143e+05	6.572963e+04
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 6.573e+04,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 6.573e+04,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 6.573e+04,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 6.573e+04,
1.483e+00]]), array([2.994e-01, 2.994e-01, ..., 2.994e-01, 2.994e-01]))

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.2993608748247323
x: [6.682e-02 5.467e-07 ... 6.573e+04 1.483e+00]
nit: 970
nfev: 1908

['SM data type data plots for mutation', 'Output9', 'using model:', 'model_thermodynam





time elapsed for this fit
--- 4.826654672622681 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0.400668689789761 33, 0.400668689789761 33), (0.009732436968536 63, 0.009732436968536 63), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (0, None), (0, None), (0, None), (0, None), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.293

RSS (initial)=0.948

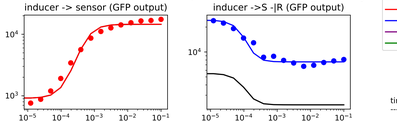
RSS (% reduction)=0.764

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	-1.725505e+10	2.011834e+12	1.994579e+12
C_pl	2.666172e-02	1.968035e-02	4.634207e-02
K_l	-8.759039e-07	1.281986e-06	4.060826e-07
A_o	-7.327359e+04	1.760143e+05	1.027408e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.027e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.027e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.027e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.027e+05,
1.483e+00]]), array([2.926e-01, 2.926e-01, ..., 2.926e-01, 2.926e-01]))

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.29260260242500924
x: [6.682e-02 5.467e-07 ... 1.027e+05 1.483e+00]
nit: 795
nfev: 1675

['SM data type data plots for mutation', 'Regulator1', 'using model:', 'model_thermodynamic']



time elapsed for this fit
--- 377.87938928604126 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.525

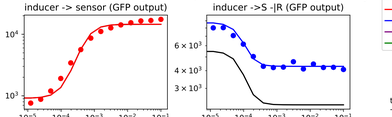
RSS (initial)=5.764

RSS (% reduction)=0.916

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	2.915441e-02	4.006687e-01	4.298231e-01
C_pt	-9.731994e-03	9.732437e-03	4.432139e-07
K_t	1.208057e+00	8.404184e-05	1.208141e+00
A_r	3.948229e+10	5.876297e+05	3.948288e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.5254356980442068
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 134232
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([5.254e-01, 5.254e-01, ..., 5.254e-01, 5.254e-01]))

['SM data type data plots for mutation', 'Regulator10', 'using model:', 'model_thermodyna…



time elapsed for this fit
--- 378.6163139343262 seconds ---

((0.0668170228598236 3, 0.0668170228598236 3), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.426

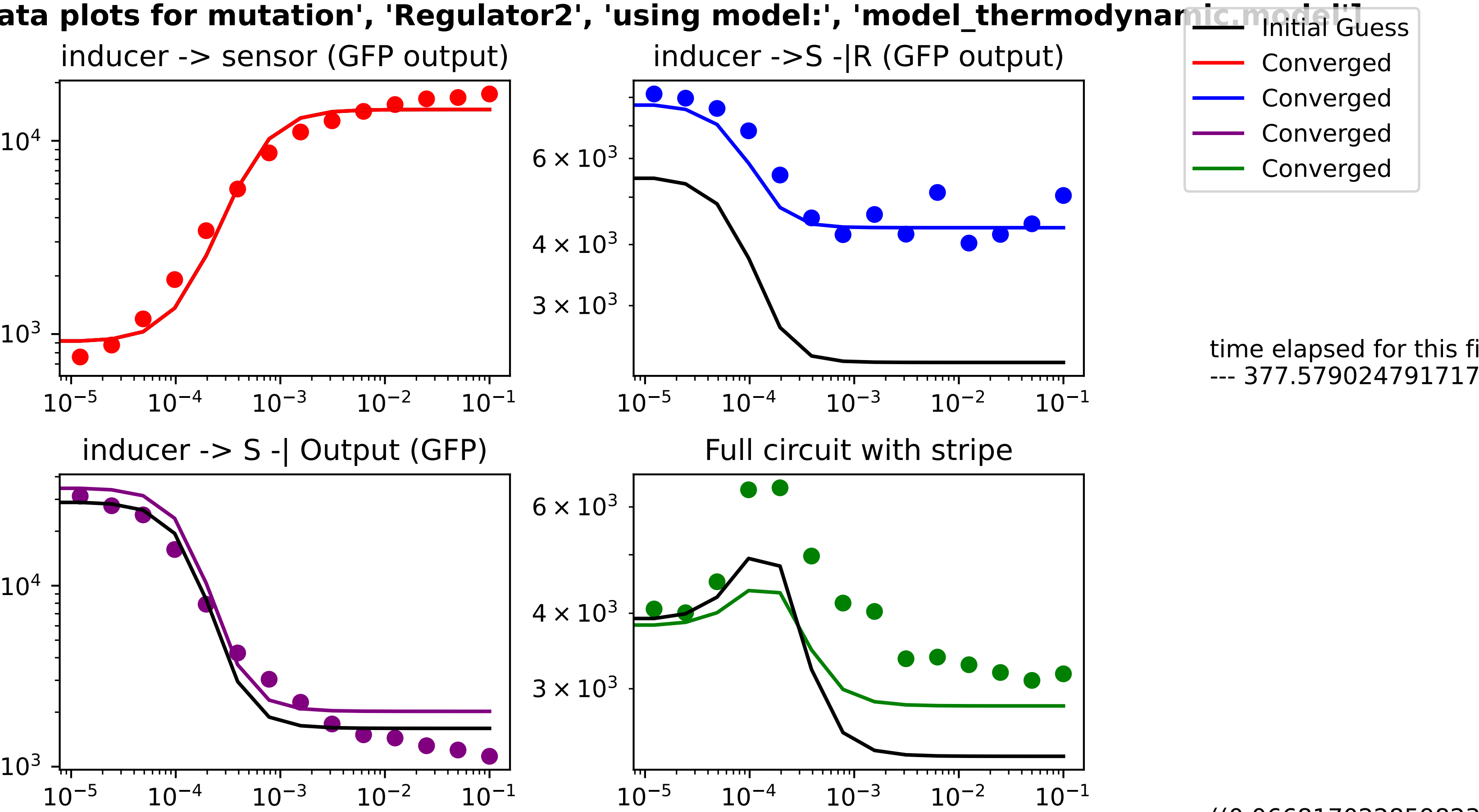
RSS (initial)=1.739

RSS (% reduction)=0.803

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	-5.387568e-02	4.006687e-01	3.467930e-01
C_pt	-9.731388e-03	9.732437e-03	1.048554e-06
K_t	1.088586e+00	8.404184e-05	1.088670e+00
A_r	1.175045e+10	5.876297e+05	1.175104e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.4256381750221776
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 133999
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([4.256e-01, 4.256e-01, ..., 4.256e-01, 4.256e-01]))

['SM data type data plots for mutation', 'Regulator2', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 377.57902479171753 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.536

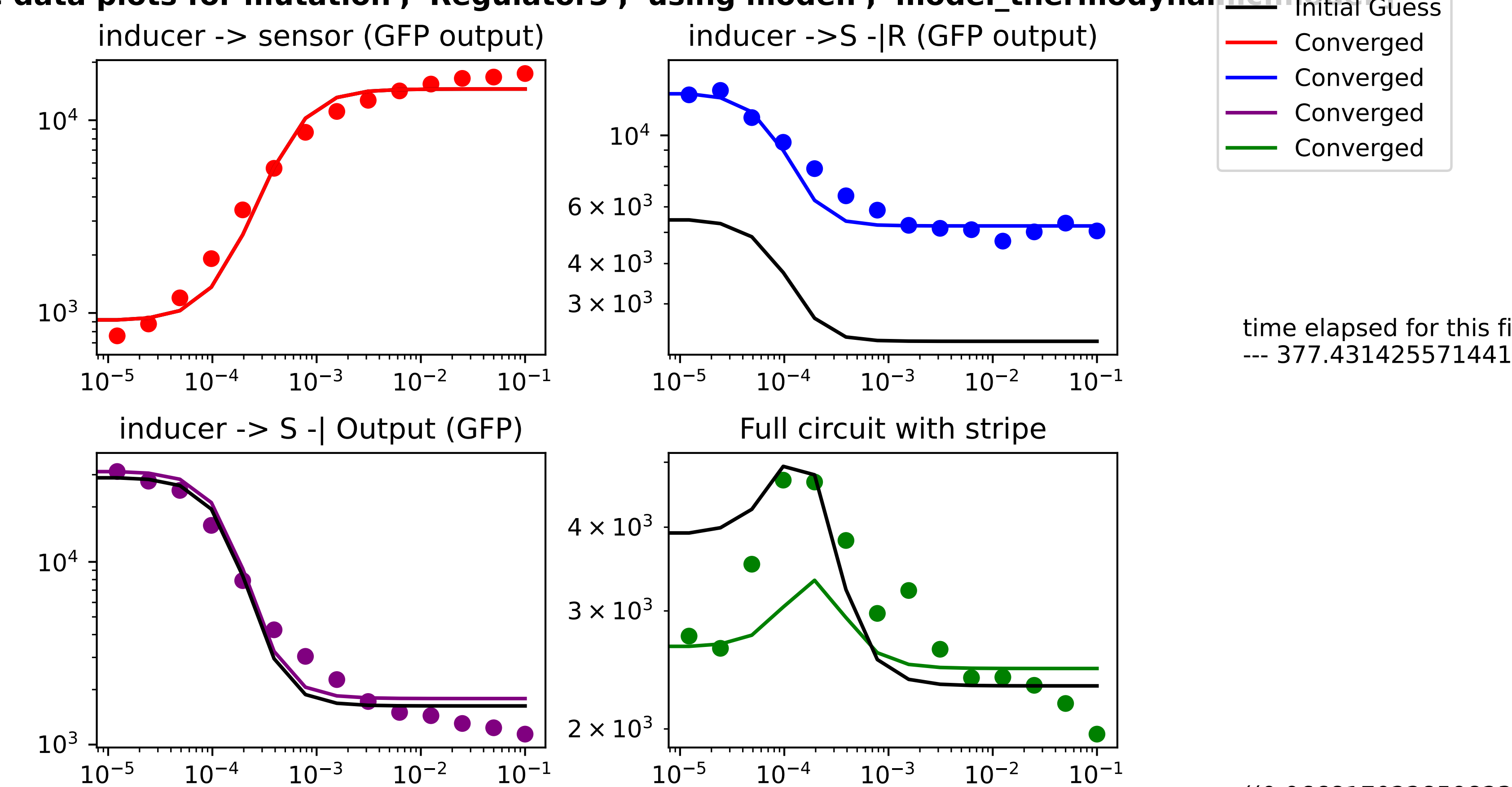
RSS (initial)=1.578

RSS (% reduction)=0.746

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	9.797454e-02	4.006687e-01	4.986432e-01
C_pt	-9.731694e-03	9.732437e-03	7.428634e-07
K_t	2.016301e+00	8.404184e-05	2.016385e+00
A_r	1.165325e+10	5.876297e+05	1.165384e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00


```
       message: Maximum number of iterations has been exceeded.
       success: False
        status: 2
           fun: 0.536474686181655
             x: [ 6.682e-02  5.467e-07 ...  1.760e+05  1.483e+00]
           nit: 100000
          nfev: 134062
 final_simplex: (array([[ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        ...,
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00]]), array([ 5.365e-01,  5.365e-01, ...,  5.365e-01,  5.365e-01]))
```

['SM data type data plots for mutation', 'Regulator3', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 377.43142557144165 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.401

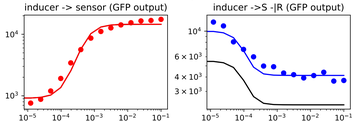
RSS (initial)=2.604

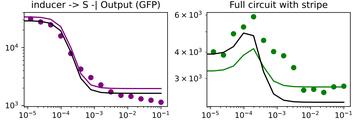
RSS (% reduction)=0.867

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	3.949270e-02	4.006687e-01	4.401614e-01
C_pt	-9.732210e-03	9.732437e-03	2.272095e-07
K_t	3.268408e+00	8.404184e-05	3.268492e+00
A_r	5.201842e+10	5.876297e+05	5.201900e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
       message: Maximum number of iterations has been exceeded.
       success: False
        status: 2
           fun: 0.4010297772045624
             x: [ 6.682e-02  5.467e-07 ...  1.760e+05  1.483e+00]
           nit: 100000
          nfev: 134035
 final_simplex: (array([[ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        ...,
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.682e-02,  5.467e-07, ...,  1.760e+05,
                          1.483e+00]]), array([ 4.010e-01,  4.010e-01, ...,  4.010e-01,  4.010e-01]))
```

['SM data type data plots for mutation', 'Regulator4', 'using model:', 'model_thermodynamic']





time elapsed for this fit
--- 376.6429271697998 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.522

RSS (initial)=1.638

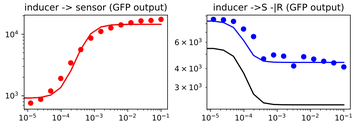
RSS (% reduction)=0.758

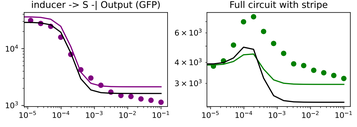
	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	8.427426e-02	4.006687e-01	4.849430e-01
C_pt	-9.732299e-03	9.732437e-03	1.379171e-07
K_t	6.015749e+00	8.404184e-05	6.015833e+00
A_r	6.142023e+10	5.876297e+05	6.142082e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05, 1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05, 1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05, 1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05, 1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05, 1.483e+00]]), array([5.224e-01, 5.224e-01, ..., 5.224e-01, 5.224e-01]))

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.5223637210734323
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 134222

['SM data type data plots for mutation', 'Regulator5', 'using model:', 'model_thermodynamic']





time elapsed for this fit
--- 376.56076169013977 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.729

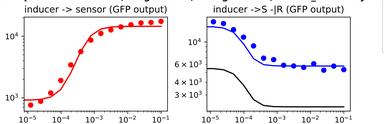
RSS (initial)=1.965

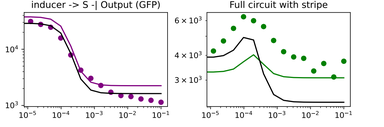
RSS (% reduction)=0.729

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	1.257470e-01	4.006687e-01	5.264157e-01
C_pt	9.731821e-03	9.732437e-03	6.155526e-07
K_t	2.141499e+00	8.404184e-05	2.141583e+00
A_r	1.356061e+10	5.876297e+05	1.356120e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.7288179242762479
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 133858
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([7.288e-01, 7.288e-01, ..., 7.288e-01, 7.288e-01]))

['SM data type data plots for mutation', 'Regulator6', 'using model:', 'model_thermodynamic']





time elapsed for this fit
--- 379.7960126399994 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.83

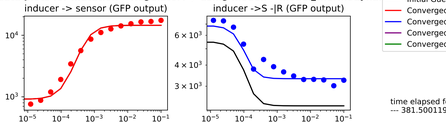
RSS (initial)=3.543

RSS (% reduction)=0.81

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	1.544831e-01	4.006687e-01	5.551518e-01
C_pt	-9.731445e-03	9.732437e-03	9.922687e-07
K_t	8.202526e-01	8.404184e-05	8.203367e-01
A_r	1.046137e+10	5.876297e+05	1.046196e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.8296857194790516
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 134031
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([8.297e-01, 8.297e-01, ..., 8.297e-01, 8.297e-01]))

['SM data type data plots for mutation', 'Regulator7', 'using model:', 'model_thermodynamic.txt']



time elapsed for this fit
--- 381.5001196861267 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.577

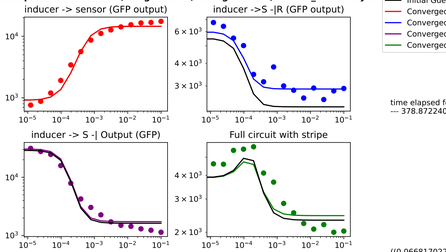
RSS (initial)=1.084

RSS (% reduction)=0.653

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	1.035982e-01	4.006687e-01	5.042669e-01
C_pt	-9.732102e-03	9.732437e-03	3.354411e-07
K_t	3.320906e+00	8.404184e-05	3.320990e+00
A_r	1.956665e+10	5.876297e+05	1.956724e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.5774043752739595
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 133970
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([5.774e-01, 5.774e-01, ..., 5.774e-01, 5.774e-01]))

['SM data type data plots for mutation', 'Regulator8', 'using model:', 'model_thermodynamic']



time elapsed for this fit
--- 378.87224078178406 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.379

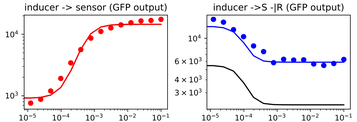
RSS (initial)=0.498

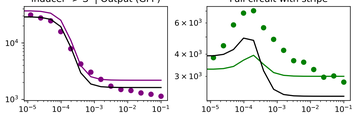
RSS (% reduction)=0.568

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	2.640737e-02	4.006687e-01	4.270761e-01
C_pt	-9.731752e-03	9.732437e-03	6.852059e-07
K_t	1.600575e+00	8.404184e-05	1.600659e+00
A_r	9.808193e+09	5.876297e+05	9.808781e+09
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.37895131260256343
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 133953
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([3.790e-01, 3.790e-01, ..., 3.790e-01, 3.790e-01]))

['SM data type data plots for mutation', 'Regulator9', 'using model:', 'model_thermodynamic.txt']





time elapsed for this fit
--- 380.94778752326965 seconds ---

((0.06681702285982363, 0.06681702285982363), (5.466972031538808e-07, 5.466972031538808e-07), (18145.27457406776, 18145.27457406776), (381988244.4333938, 381988244.4333938), (14589.087744354982, 14589.087744354982), (0, None), (0, None), (0, None), (0, None), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.829

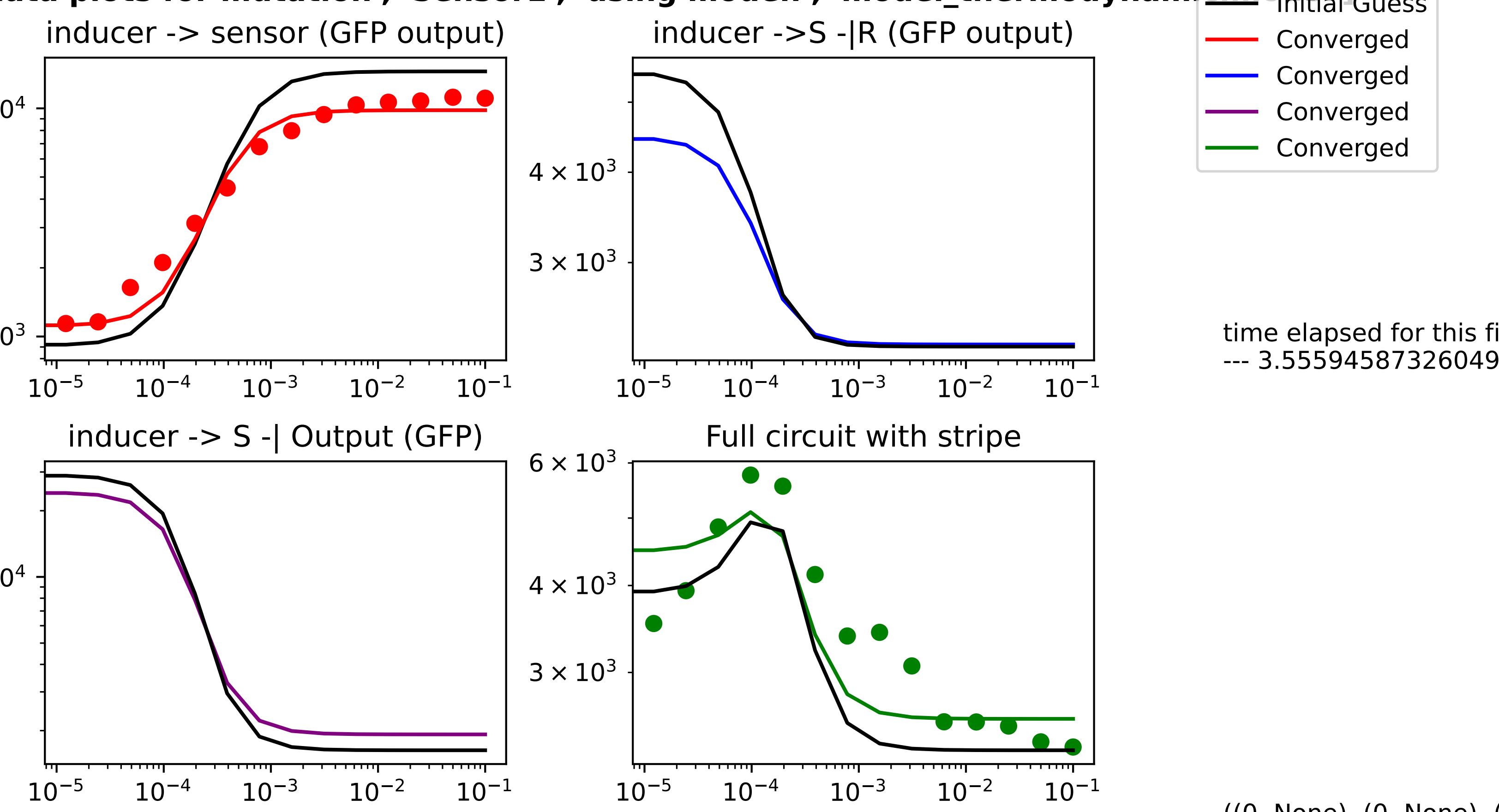
RSS (initial)=3.427

RSS (% reduction)=0.805

	epsilon	Initial_guesses	Converged
P_b	0.000000e+00	6.681702e-02	6.681702e-02
P_u	0.000000e+00	5.466972e-07	5.466972e-07
K_12	0.000000e+00	1.814527e+04	1.814527e+04
C_pa	0.000000e+00	3.819882e+08	3.819882e+08
A_s	0.000000e+00	1.458909e+04	1.458909e+04
P_r	1.406128e-01	4.006687e-01	5.412815e-01
C_pt	-9.732240e-03	9.732437e-03	1.972316e-07
K_t	4.947199e+00	8.404184e-05	4.947283e+00
A_r	5.498090e+10	5.876297e+05	5.498149e+10
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Maximum number of iterations has been exceeded.
success: False
status: 2
fun: 0.8293144629815786
x: [6.682e-02 5.467e-07 ... 1.760e+05 1.483e+00]
nit: 100000
nfev: 134215
final_simplex: (array([[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
...,
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00],
[6.682e-02, 5.467e-07, ..., 1.760e+05,
1.483e+00]]), array([8.293e-01, 8.293e-01, ..., 8.293e-01, 8.293e-01]))

['SM data type data plots for mutation', 'Sensor1', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.555945873260498 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.13

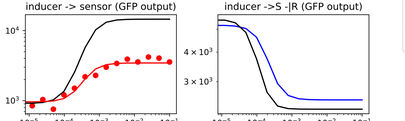
RSS (initial)=0.391

RSS (% reduction)=0.75

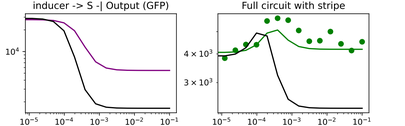
	epsilon	Initial_guesses	Converged
P_b	6.057136e-02	6.681702e-02	1.273884e-01
P_u	1.412181e-07	5.466972e-07	6.879153e-07
K_12	5.167554e+03	1.814527e+04	2.331283e+04
C_pa	1.579994e+07	3.819882e+08	3.977882e+08
A_s	-4.739030e+03	1.458909e+04	9.850058e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
message: Optimization terminated successfully.
success: True
 status: 0
    fun: 0.13034096518065122
      x: [ 1.274e-01  6.879e-07 ...  1.760e+05  1.483e+00]
    nit: 627
   nfev: 1260
final_simplex: (array([[ 1.274e-01,  6.879e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 1.274e-01,  6.879e-07, ...,  1.760e+05,
                 1.483e+00],
               ...,
               [ 1.274e-01,  6.879e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 1.274e-01,  6.879e-07, ...,  1.760e+05,
                 1.483e+00]]), array([ 1.303e-01,  1.303e-01, ...,  1.303e-01,  1.303e-01]))
```

['SM data type data plots for mutation', 'Sensor10', 'using model:', 'model_thermodynam[illegible]



time elapsed for this fit
--- 3.9765100479125977 seconds ---



((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.009732436969853663, 0.009732436969853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (20118339900570366, 20118339900570366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.086

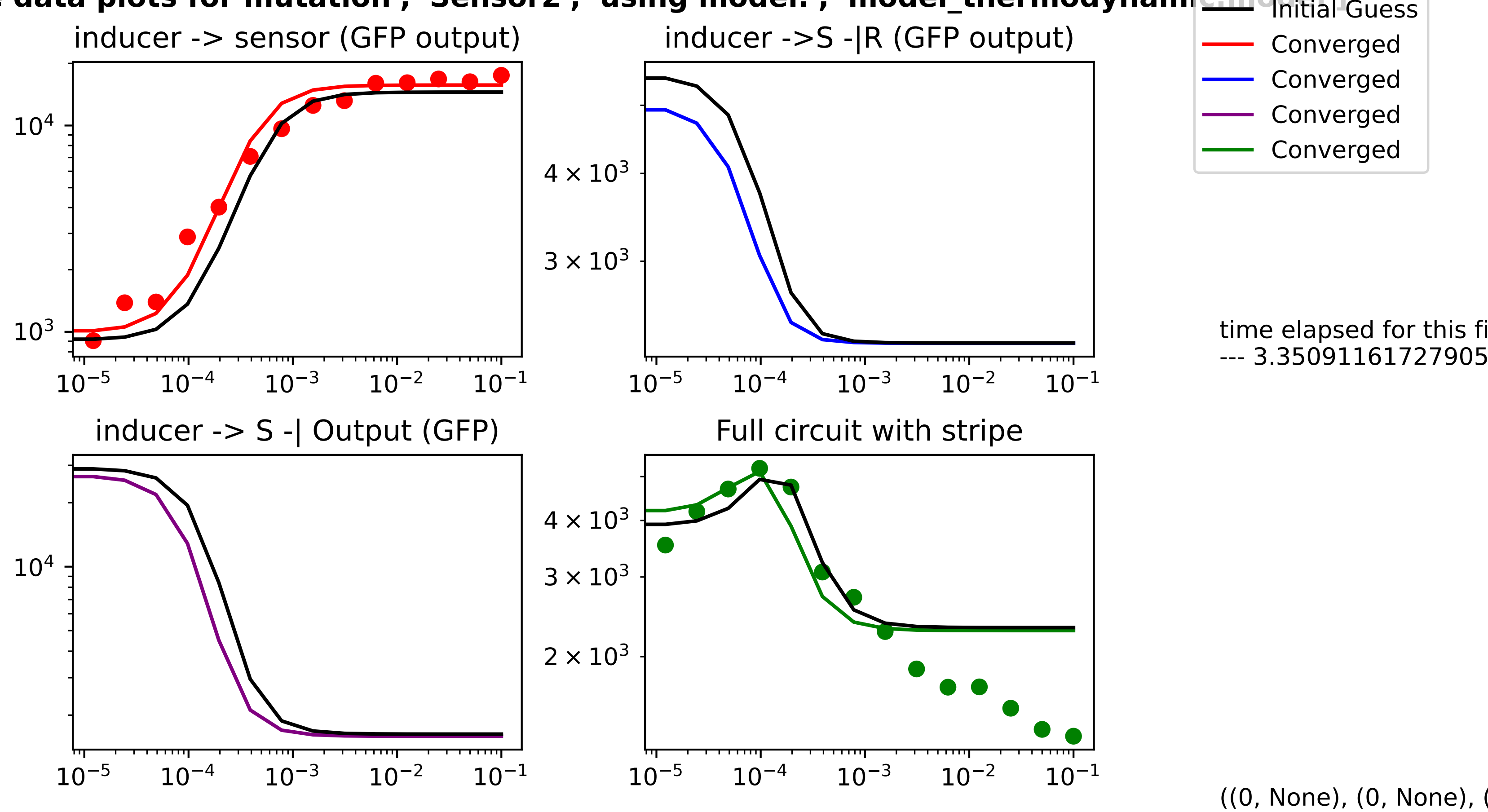
RSS (initial)=3.941

RSS (% reduction)=0.979

	epsilon	Initial_guesses	Converged
P_b	3.191051e-01	6.681702e-02	3.859221e-01
P_u	2.099687e-06	5.466972e-07	2.646384e-06
K_12	-7.947984e+03	1.814527e+04	1.019729e+04
C_pa	-1.270324e+08	3.819882e+08	2.549559e+08
A_s	-1.113224e+04	1.458909e+04	3.456847e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

message: Optimization terminated successfully.
success: True
status: 0
fun: 0.08639189461763504
x: [3.859e-01 2.646e-06 ... 1.760e+05 1.483e+00]
nit: 748
nfev: 1409
final_simplex: (array([[3.859e-01, 2.646e-06, ..., 1.760e+05,
1.483e+00],
[3.859e-01, 2.646e-06, ..., 1.760e+05,
1.483e+00],
...,
[3.859e-01, 2.646e-06, ..., 1.760e+05,
1.483e+00],
[3.859e-01, 2.646e-06, ..., 1.760e+05,
1.483e+00]]), array([8.639e-02, 8.639e-02, ..., 8.639e-02, 8.639e-02]))

['SM data type data plots for mutation', 'Sensor2', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.3509116172790527 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.289

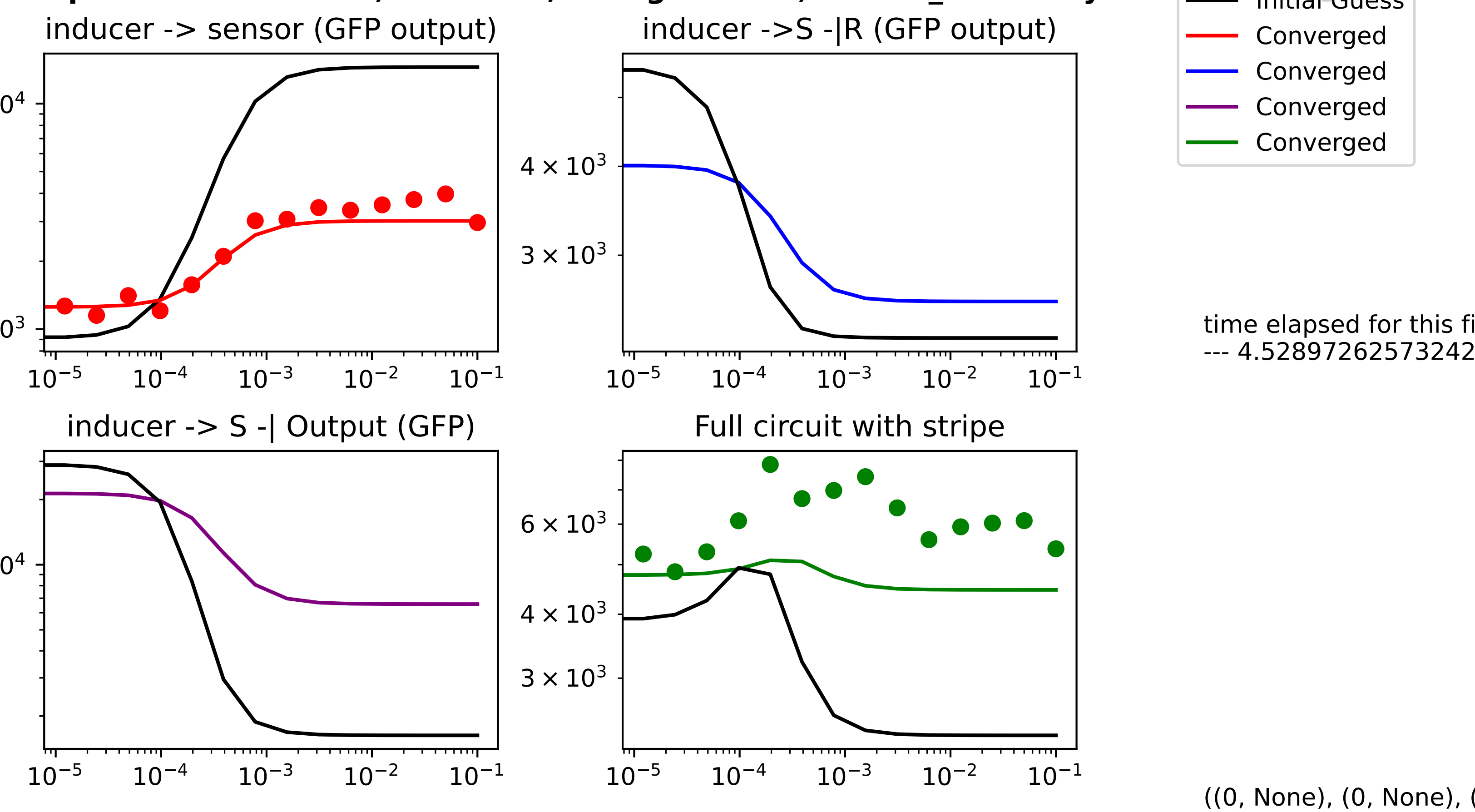
RSS (initial)=0.413

RSS (% reduction)=0.588

	epsilon	Initial_guesses	Converged
P_b	7.803915e-04	6.681702e-02	6.759741e-02
P_u	1.158109e-07	5.466972e-07	6.625081e-07
K_12	5.037474e+03	1.814527e+04	2.318275e+04
C_pa	8.192664e+07	3.819882e+08	4.639149e+08
A_s	1.165319e+03	1.458909e+04	1.575441e+04
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00


```
       message: Optimization terminated successfully.
       success: True
        status: 0
           fun: 0.2892895472164466
             x: [ 6.760e-02  6.625e-07 ...  1.760e+05  1.483e+00]
           nit: 552
          nfev: 1149
 final_simplex: (array([[ 6.760e-02,  6.625e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.760e-02,  6.625e-07, ...,  1.760e+05,
                          1.483e+00],
                        ...,
                        [ 6.760e-02,  6.625e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.760e-02,  6.625e-07, ...,  1.760e+05,
                          1.483e+00]]), array([ 2.893e-01,  2.893e-01, ...,  2.893e-01,  2.893e-01]))
```

['SM data type data plots for mutation', 'Sensor3', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 4.528972625732422 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.282

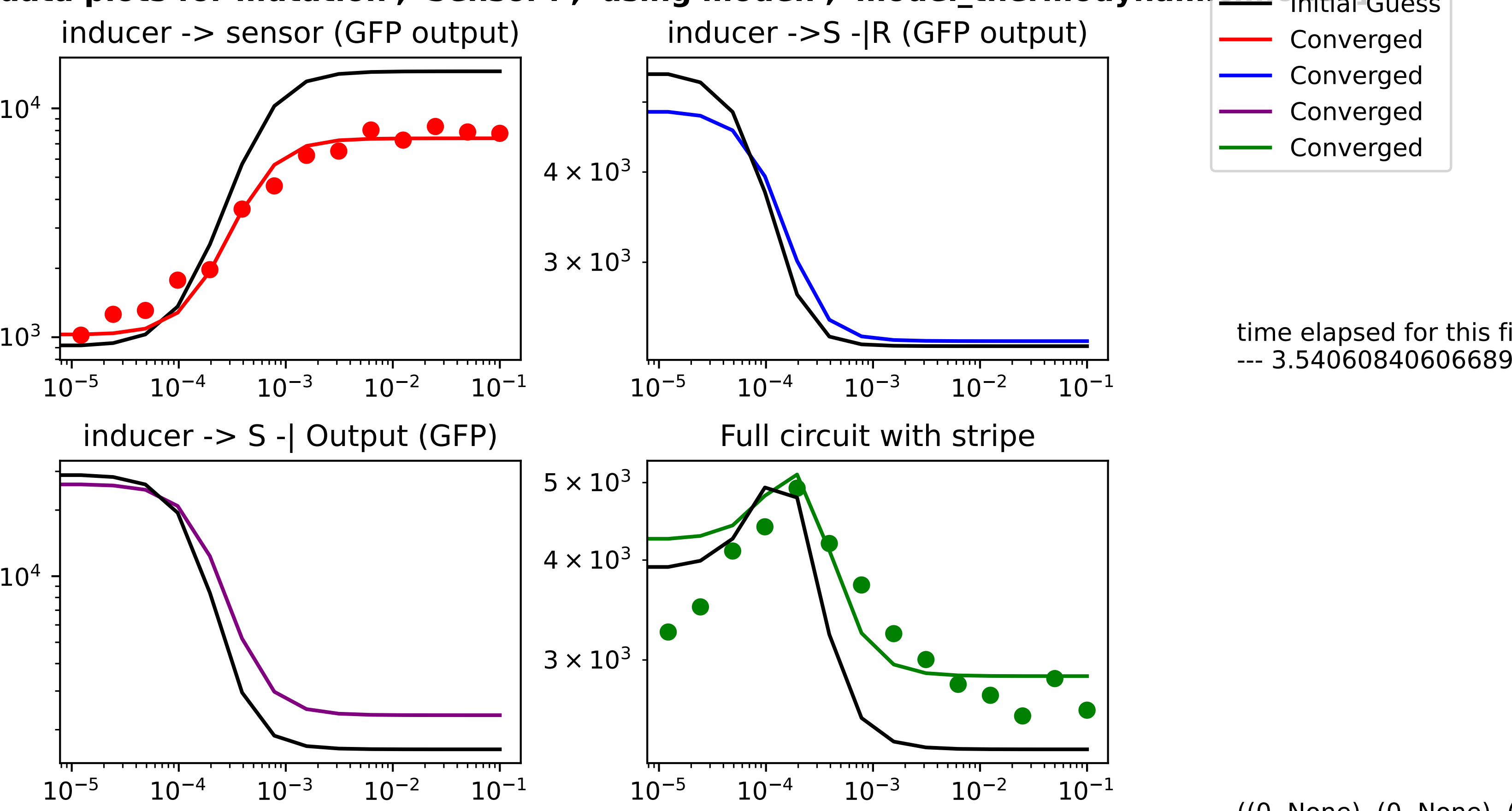
RSS (initial)=4.881

RSS (% reduction)=0.945

	epsilon	Initial_guesses	Converged
P_b	6.221514e-01	6.681702e-02	6.889684e-01
P_u	2.146799e-07	5.466972e-07	7.613771e-07
K_12	1.459424e+05	1.814527e+04	1.640877e+05
C_pa	-3.088813e+08	3.819882e+08	7.310693e+07
A_s	-1.151416e+04	1.458909e+04	3.074926e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
       message: Optimization terminated successfully.
       success: True
        status: 0
           fun: 0.28203224662714377
             x: [ 6.890e-01  7.614e-07 ...  1.760e+05  1.483e+00]
           nit: 907
          nfev: 1637
 final_simplex: (array([[ 6.890e-01,  7.614e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.890e-01,  7.614e-07, ...,  1.760e+05,
                          1.483e+00],
                        ...,
                        [ 6.890e-01,  7.614e-07, ...,  1.760e+05,
                          1.483e+00],
                        [ 6.890e-01,  7.614e-07, ...,  1.760e+05,
                          1.483e+00]]), array([ 2.820e-01,  2.820e-01, ...,  2.820e-01,  2.820e-01]))
```

['SM data type data plots for mutation', 'Sensor4', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.5406084060668945 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.108

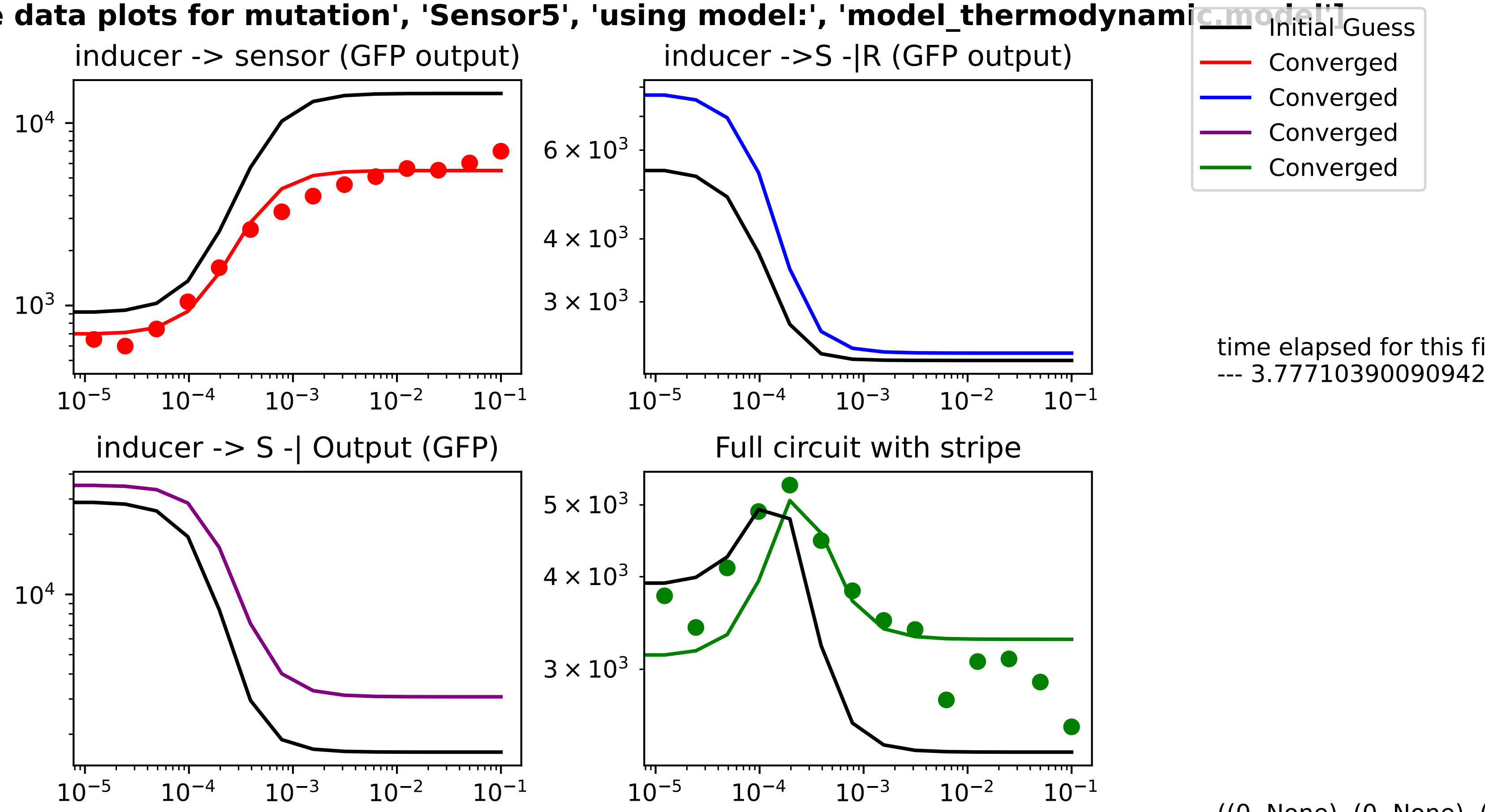
RSS (initial)=0.912

RSS (% reduction)=0.894

	epsilon	Initial_guesses	Converged
P_b	9.246607e-02	6.681702e-02	1.592831e-01
P_u	3.418713e-08	5.466972e-07	5.808843e-07
K_12	1.872905e+04	1.814527e+04	3.687432e+04
C_pa	-1.462815e+08	3.819882e+08	2.357067e+08
A_s	-7.136656e+03	1.458909e+04	7.452432e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
 message: Optimization terminated successfully.
 success: True
  status: 0
     fun: 0.10757778419650403
       x: [ 1.593e-01  5.809e-07 ...  1.760e+05  1.483e+00]
     nit: 665
    nfev: 1308
final_simplex: (array([[ 1.593e-01,  5.809e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 1.593e-01,  5.809e-07, ...,  1.760e+05,
                 1.483e+00],
               ...,
               [ 1.593e-01,  5.809e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 1.593e-01,  5.809e-07, ...,  1.760e+05,
                 1.483e+00]]), array([ 1.076e-01,  1.076e-01, ...,  1.076e-01,  1.076e-01]))
```

['SM data type data plots for mutation', 'Sensor5', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.777103900909424 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.131

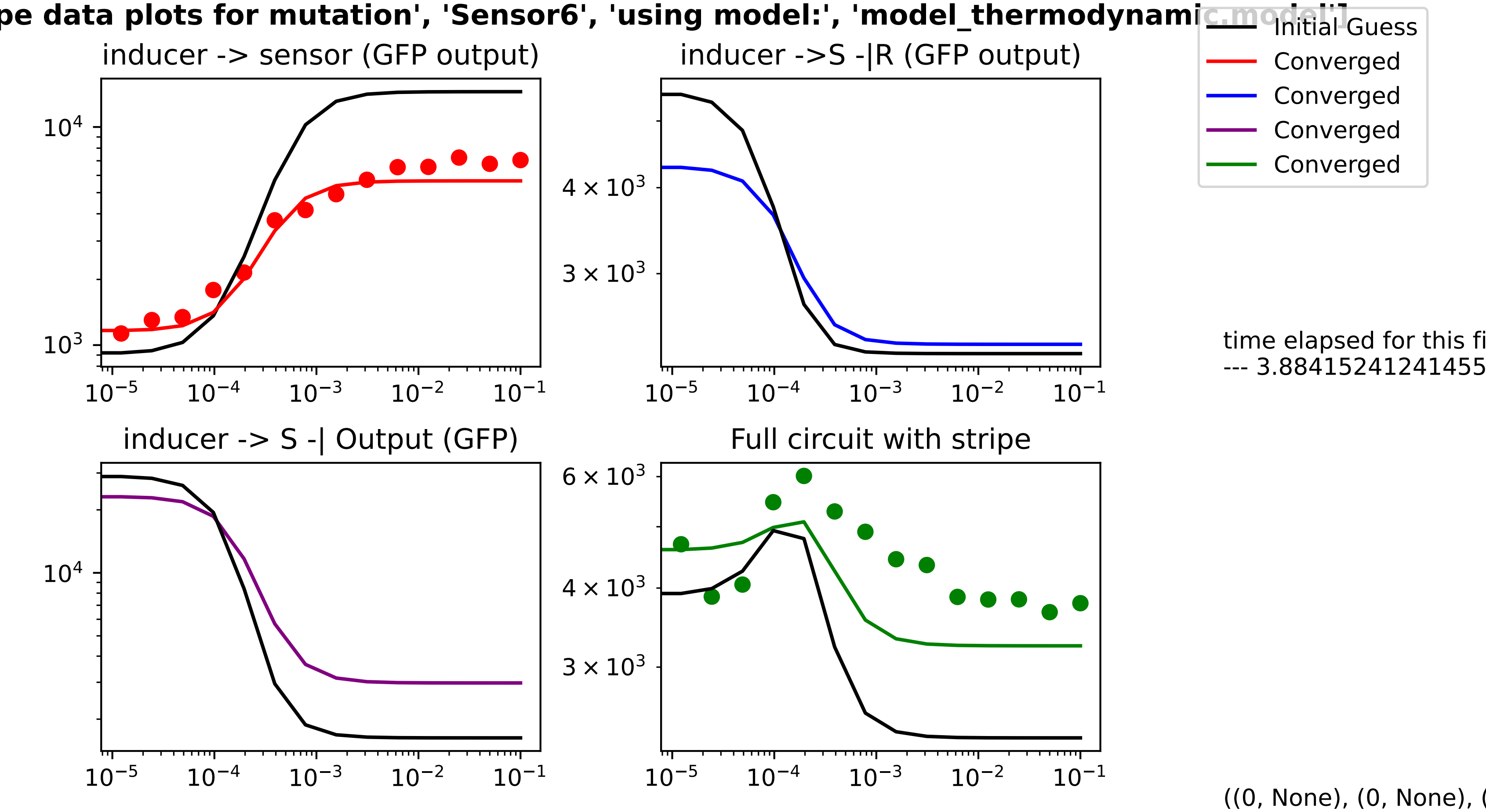
RSS (initial)=2.034

RSS (% reduction)=0.94

	epsilon	Initial_guesses	Converged
P_b	7.800708e-02	6.681702e-02	1.448241e-01
P_u	1.683088e-07	5.466972e-07	7.150060e-07
K_12	-1.960350e+03	1.814527e+04	1.618492e+04
C_pa	1.452903e+08	3.819882e+08	5.272785e+08
A_s	-9.085071e+03	1.458909e+04	5.504017e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
      message: Optimization terminated successfully.
      success: True
       status: 0
          fun: 0.13097157211244007
            x: [ 1.448e-01  7.150e-07 ...  1.760e+05  1.483e+00]
          nit: 722
         nfev: 1383
final_simplex: (array([[ 1.448e-01,  7.150e-07, ...,  1.760e+05,
                         1.483e+00],
                       [ 1.448e-01,  7.150e-07, ...,  1.760e+05,
                         1.483e+00],
                       ...,
                       [ 1.448e-01,  7.150e-07, ...,  1.760e+05,
                         1.483e+00],
                       [ 1.448e-01,  7.150e-07, ...,  1.760e+05,
                         1.483e+00]]), array([ 1.310e-01,  1.310e-01, ...,  1.310e-01,  1.310e-01]))
```

['SM data type data plots for mutation', 'Sensor6', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.884152412414551 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.164

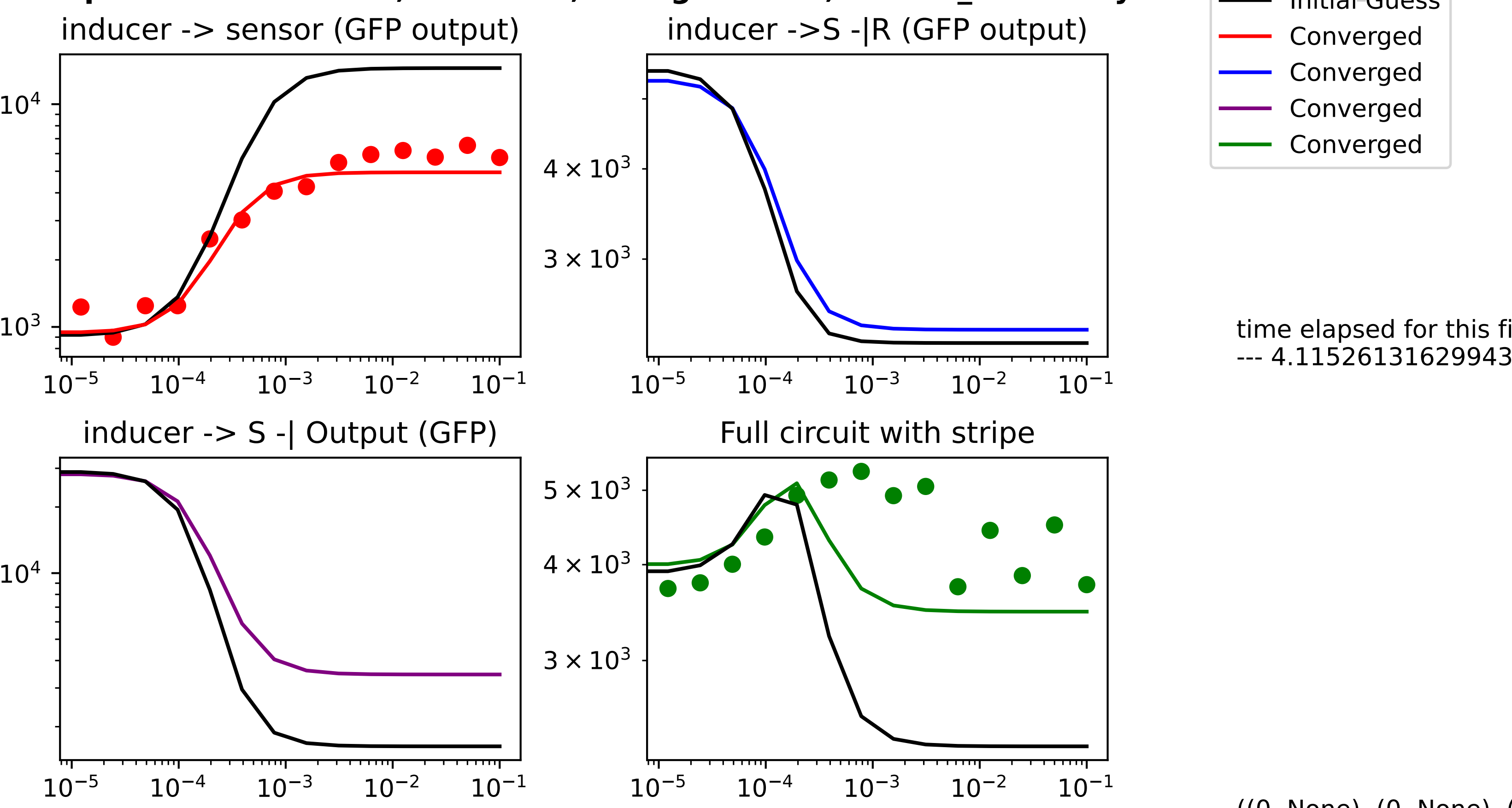
RSS (initial)=1.644

RSS (% reduction)=0.909

	epsilon	Initial_guesses	Converged
P_b	1.899018e-01	6.681702e-02	2.567189e-01
P_u	8.837074e-08	5.466972e-07	6.350679e-07
K_12	1.892630e+04	1.814527e+04	3.707158e+04
C_pa	-5.509277e+07	3.819882e+08	3.268955e+08
A_s	-8.898666e+03	1.458909e+04	5.690422e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
message: Optimization terminated successfully.
success: True
 status: 0
    fun: 0.16389110666250312
      x: [ 2.567e-01  6.351e-07 ...  1.760e+05  1.483e+00]
    nit: 720
   nfev: 1402
final_simplex: (array([[ 2.567e-01,  6.351e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 2.567e-01,  6.351e-07, ...,  1.760e+05,
                 1.483e+00],
               ...,
               [ 2.567e-01,  6.351e-07, ...,  1.760e+05,
                 1.483e+00],
               [ 2.567e-01,  6.351e-07, ...,  1.760e+05,
                 1.483e+00]]), array([ 1.639e-01,  1.639e-01, ...,  1.639e-01,  1.639e-01]))
```

['SM data type data plots for mutation', 'Sensor7', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 4.1152613162994385 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.194

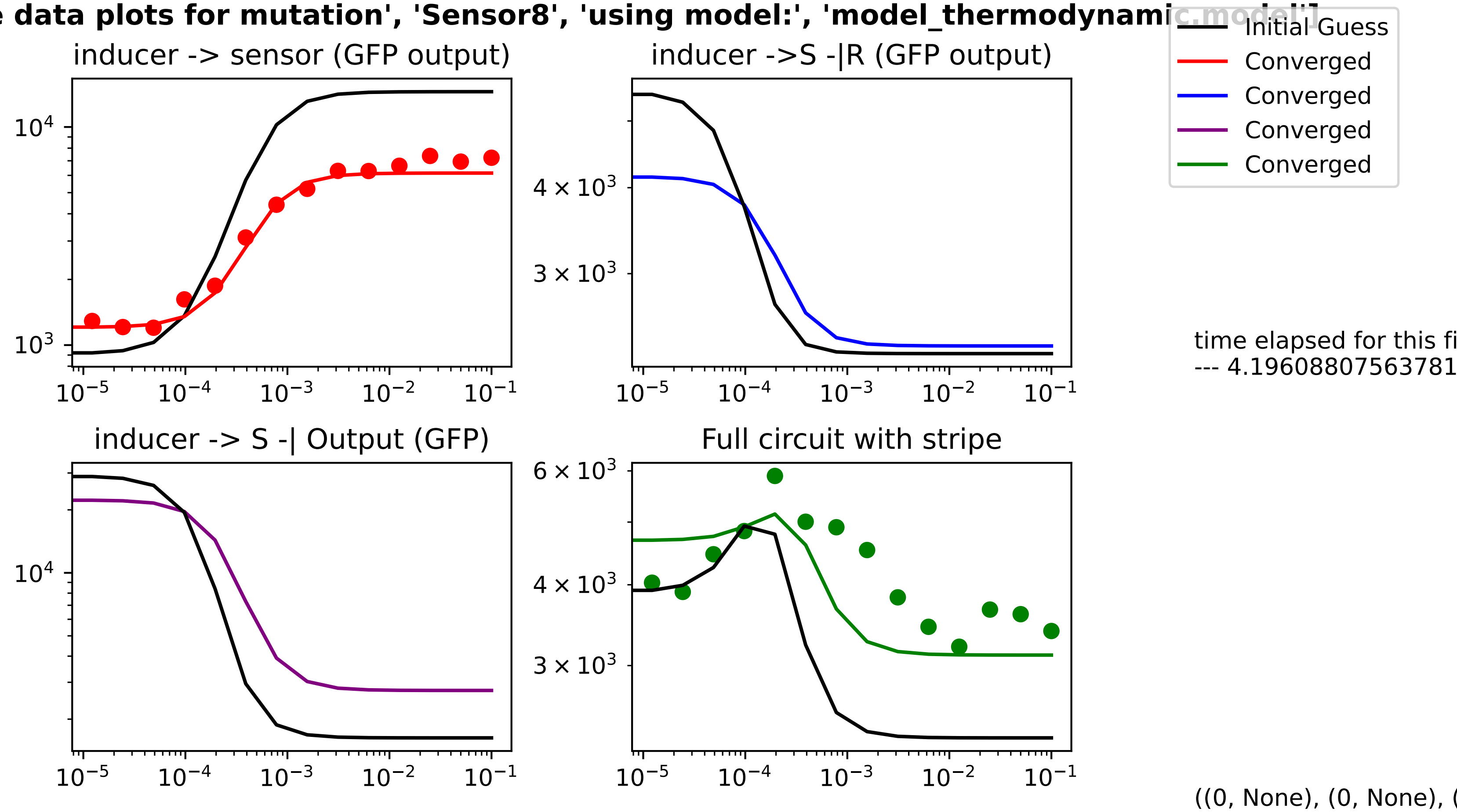
RSS (initial)=2.062

RSS (% reduction)=0.914

	epsilon	Initial_guesses	Converged
P_b	1.679503e-01	6.681702e-02	2.347673e-01
P_u	5.988051e-07	5.466972e-07	1.145502e-06
K_12	-1.068307e+02	1.814527e+04	1.803844e+04
C_pa	1.602410e+08	3.819882e+08	5.422293e+08
A_s	-9.636638e+03	1.458909e+04	4.952449e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
 message: Optimization terminated successfully.
 success: True
  status: 0
     fun: 0.19389436569865348
       x: [ 2.348e-01  1.146e-06 ...  1.760e+05  1.483e+00]
     nit: 782
    nfev: 1487
final_simplex: (array([[ 2.348e-01,  1.146e-06, ...,  1.760e+05,
                 1.483e+00],
               [ 2.348e-01,  1.146e-06, ...,  1.760e+05,
                 1.483e+00],
               ...,
               [ 2.348e-01,  1.146e-06, ...,  1.760e+05,
                 1.483e+00],
               [ 2.348e-01,  1.146e-06, ...,  1.760e+05,
                 1.483e+00]]), array([ 1.939e-01,  1.939e-01, ...,  1.939e-01,  1.939e-01]))
```

['SM data type data plots for mutation', 'Sensor8', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 4.196088075637817 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.116

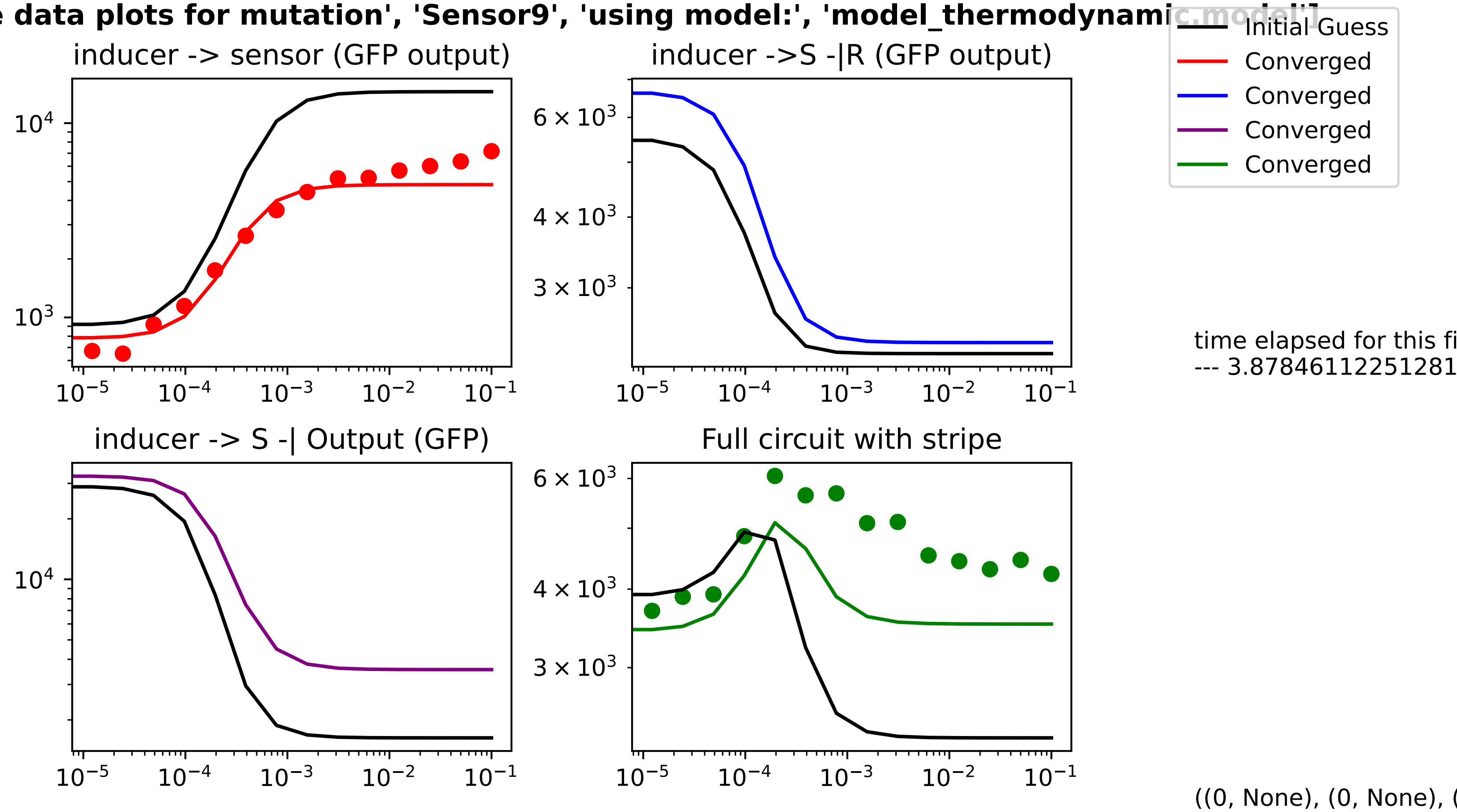
RSS (initial)=1.511

RSS (% reduction)=0.929

	epsilon	Initial_guesses	Converged
P_b	1.761795e-01	6.681702e-02	2.429966e-01
P_u	2.433612e-07	5.466972e-07	7.900584e-07
K_12	-2.065277e+03	1.814527e+04	1.608000e+04
C_pa	-7.603779e+07	3.819882e+08	3.059505e+08
A_s	-8.415768e+03	1.458909e+04	6.173320e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
      message: Optimization terminated successfully.
      success: True
       status: 0
          fun: 0.11632805022440079
            x: [ 2.430e-01  7.901e-07 ...  1.760e+05  1.483e+00]
          nit: 699
         nfev: 1349
final_simplex: (array([[ 2.430e-01,  7.901e-07, ...,  1.760e+05,
                         1.483e+00],
                       [ 2.430e-01,  7.901e-07, ...,  1.760e+05,
                         1.483e+00],
                       ...,
                       [ 2.430e-01,  7.901e-07, ...,  1.760e+05,
                         1.483e+00],
                       [ 2.430e-01,  7.901e-07, ...,  1.760e+05,
                         1.483e+00]]), array([ 1.163e-01,  1.163e-01, ...,  1.163e-01,  1.163e-01]))
```

['SM data type data plots for mutation', 'Sensor9', 'using model:', 'model_thermodynamic_model']



time elapsed for this fit
--- 3.8784611225128174 seconds ---

((0, None), (0, None), (0, None), (0, None), (0, None), (0.40066868978976133, 0.40066868978976133), (0.00973243696853663, 0.00973243696853663), (8.404183514288889e-05, 8.404183514288889e-05), (587629.7486661357, 587629.7486661357), (2011833990057.0366, 2011833990057.0366), (0.019680354296355312, 0.019680354296355312), (1.2819864660412365e-06, 1.2819864660412365e-06), (176014.34482799913, 176014.34482799913), (1.4826334558626444, 1.4826334558626444))

Across all four plots:

RSS (converged)=0.232

RSS (initial)=2.367

RSS (% reduction)=0.911

	epsilon	Initial_guesses	Converged
P_b	1.263102e-01	6.681702e-02	1.931273e-01
P_u	5.518323e-07	5.466972e-07	1.098529e-06
K_12	-1.876990e+03	1.814527e+04	1.626828e+04
C_pa	3.692068e+07	3.819882e+08	4.189089e+08
A_s	-9.756043e+03	1.458909e+04	4.833045e+03
P_r	0.000000e+00	4.006687e-01	4.006687e-01
C_pt	0.000000e+00	9.732437e-03	9.732437e-03
K_t	0.000000e+00	8.404184e-05	8.404184e-05
A_r	0.000000e+00	5.876297e+05	5.876297e+05
P_o	0.000000e+00	2.011834e+12	2.011834e+12
C_pl	0.000000e+00	1.968035e-02	1.968035e-02
K_l	0.000000e+00	1.281986e-06	1.281986e-06
A_o	0.000000e+00	1.760143e+05	1.760143e+05
F_o	0.000000e+00	1.482633e+00	1.482633e+00

```
      message: Optimization terminated successfully.
      success: True
       status: 0
          fun: 0.23187048722918466
            x: [ 1.931e-01  1.099e-06 ...  1.760e+05  1.483e+00]
          nit: 738
         nfev: 1423
final_simplex: (array([[ 1.931e-01,  1.099e-06, ...,  1.760e+05,
                         1.483e+00],
                       [ 1.931e-01,  1.099e-06, ...,  1.760e+05,
                         1.483e+00],
                       ...,
                       [ 1.931e-01,  1.099e-06, ...,  1.760e+05,
                         1.483e+00],
                       [ 1.931e-01,  1.099e-06, ...,  1.760e+05,
                         1.483e+00]]), array([ 2.319e-01,  2.319e-01, ...,  2.319e-01,  2.319e-01]))
```