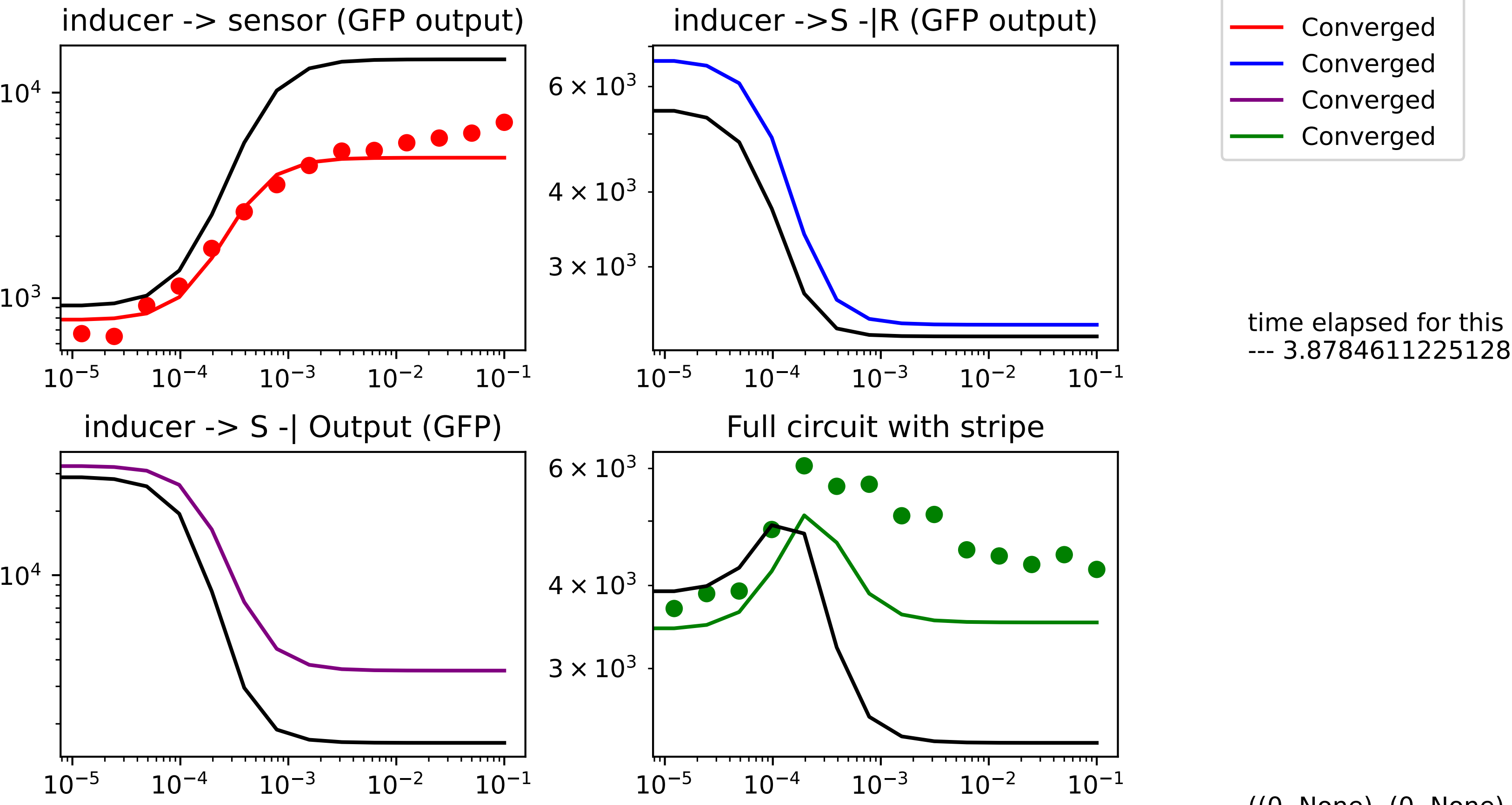
['SM data type data plots for mutation', 'Sensor9', 'using model:', 'model_thermodynamic_model']



```
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]))
```