Sweden_F_1910_homo_post.csv_run_14_20250525_212907

May 25, 2025

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/Users/navehr/Dropbox/naveh/weizmann/uri alon/aging/code_3
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Loading file from: /Users/navehr/Dropbox/naveh/weizmann/uri alon/aging/code_3/ba
ysian02/posterior_csvs_baysian01/HUMANS/Sweden_F_1910_homo_post.csv
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Reading Humans_F
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1 # 1. Density coner plot

A sample is 1 parameter set scanned. For the corner plot below, the quantiles (represented by the solid lines) are 0.16,0.5,0.84 of the samples. Dots represent individual samples (outside the line surrounding 0.84 of the samples) The parameter search is performed in the transformed space of x_c/η, β/η, x_c^2/ϵ, x_c but we also show the regular parameters

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(25,)
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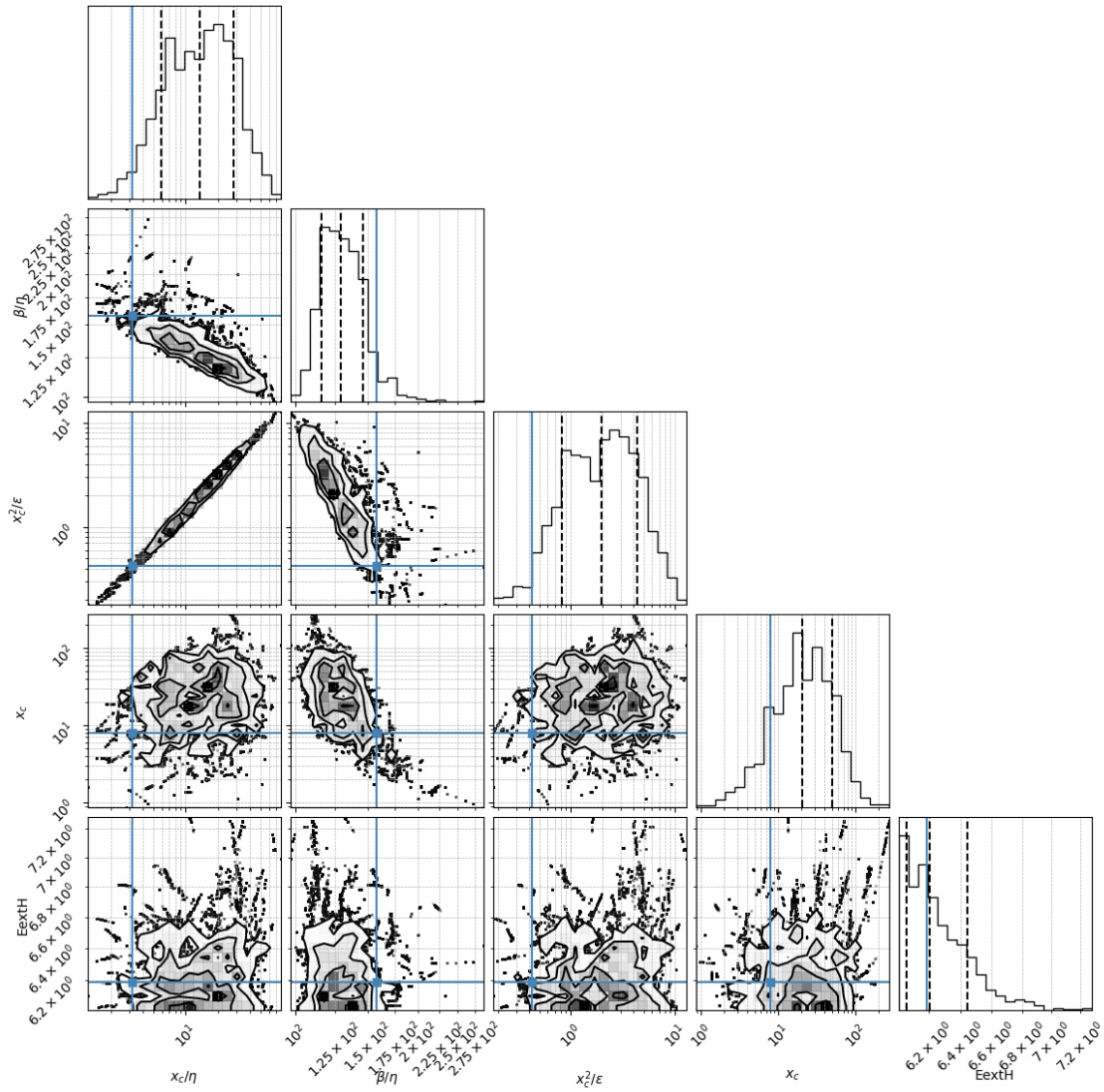
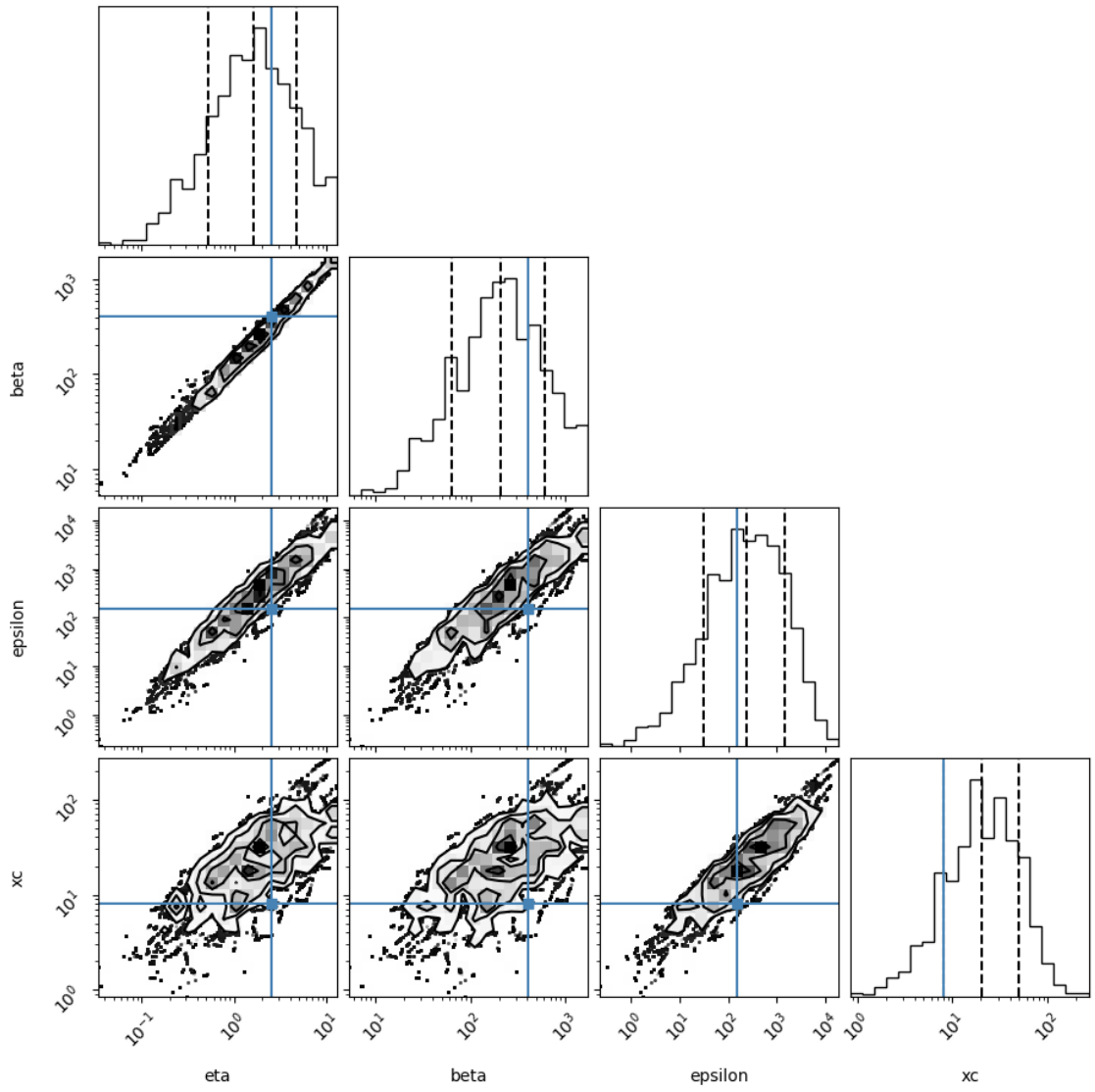
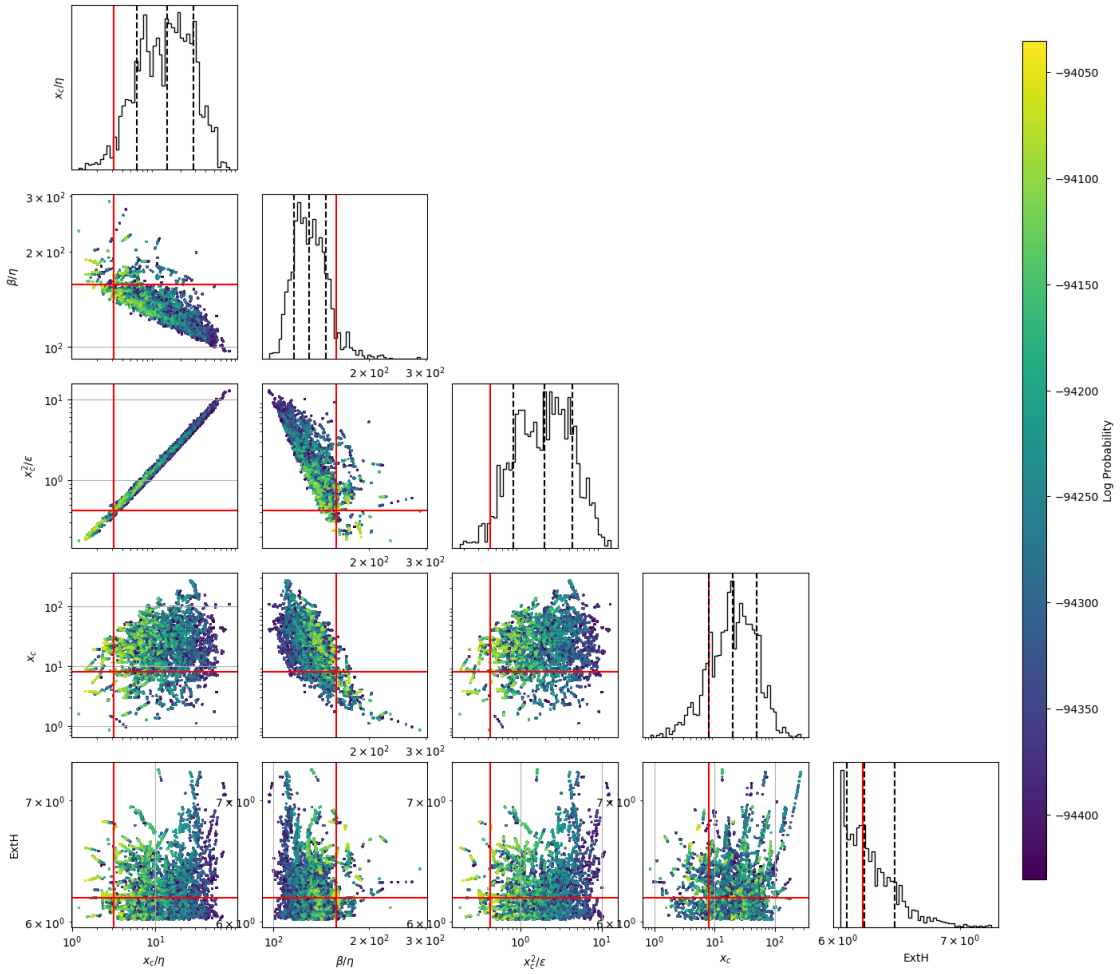

x_c/η
β/η
x_c^2/ε
x_c
EextH



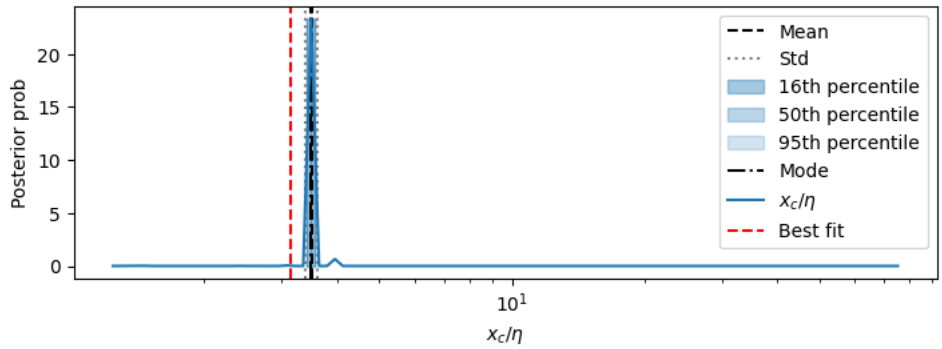
2 2. Heat map corner plot of raw samples

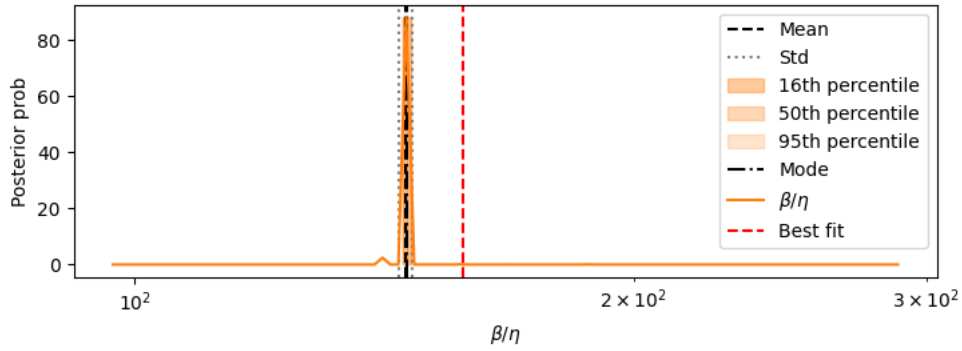
This plot shows all the raw sample points and their lnprobability

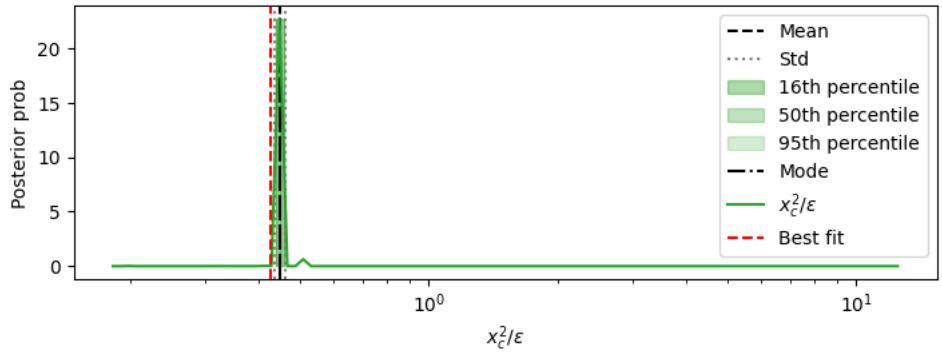


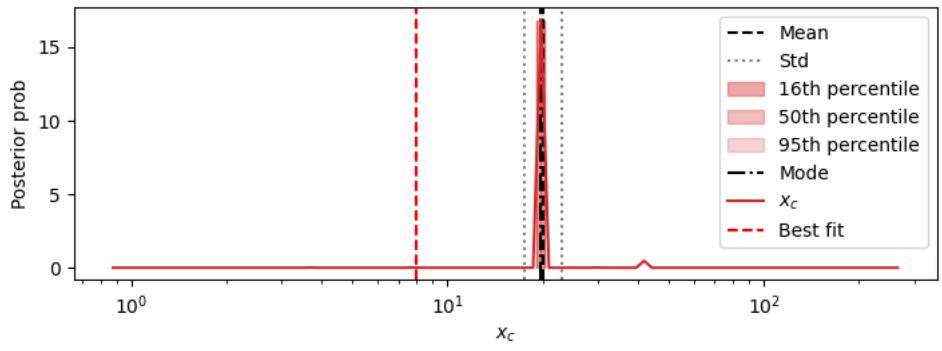
3 3. Posterior distributions of parameters

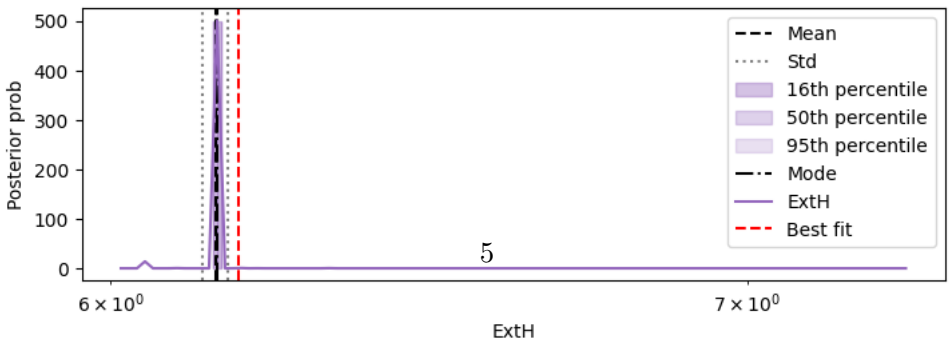
1d marginalizations of posterior distributions. we use a grid of size nbins=100-150


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit
Posterior prob
0
5
10
15
20
10^1
x_c/η

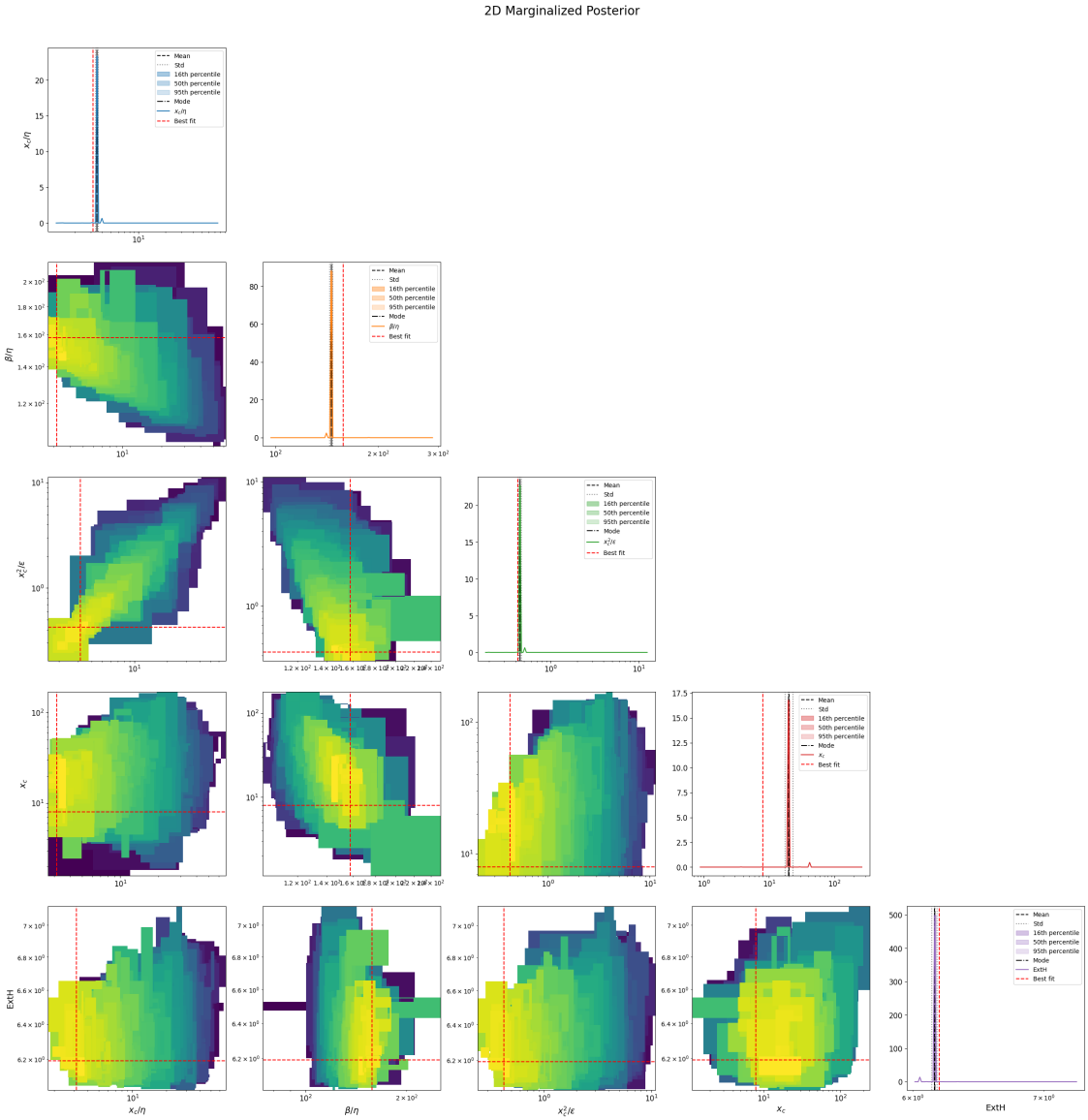

Mean
Std
16th percentile
50th percentile
95th percentile
Mode
β/η
Best fit
Posterior prob
0
20
40
60
80
10^2
2×10^2
3×10^2
β/η


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c^2/ε
Best fit
Posterior prob
0
5
10
15
20
10^0
10^1
x_c^2/ε


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c
Best fit
Posterior prob
0
5
10
15
10^0
10^1
10^2
x_c


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
ExtH
Best fit
Posterior prob
0
100
200
300
400
500
6×10^0
7×10^0
ExtH

2D marginalizations of posterior distributions

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Rescaling the samples TIME by 365
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4 4. Table of results

mode is the marginalized mode, max_likwlihood is the sample with highest likelihood mode_overall is the 4D posterior mode

	mean	std	mode	\
xc/eta	3.506	[0.115, 0.111]	3.646	
beta/eta	145.742	[1.335, 1.323]	149.076	
xc^2/epsilon	0.449	[0.0141, 0.0137]	0.467	
xc	20.151	[2.905, 2.539]	20.959	
ExtH	6.154	[0.0183, 0.0183]	6.192	
eta	7.278	[4.035, 2.596]	8.788	
beta	1125.481	[568.622, 377.765]	1340.014	
epsilon	1091.617	[1731.384, 669.503]	1629.274	
sqrt(xc/eta)	1.869	[0.042, 0.0411]	1.909	
s= eta^0.5*xc^1.5/epsilon	0.249	[0.00603, 0.00589]	0.249	
beta*xc/epsilon	19.461	[0.23, 0.228]	19.29	
eta*xc/epsilon	0.135	[5.48e-05, 5.48e-05]	0.133	
Fx=beta^2/eta*xc	7886.094	[43.618, 43.378]	7886.772	
Dx =beta*epsilon/eta*xc^2	370.559	[1.218, 1.214]	334.316	
Pk=beta*k/epsilon	0.302	[0.208, 0.123]	0.38	
Fk=beta^2/eta*k	394232.798	[113222.006, 87960.204]	402752.543	
Dk =beta*epsilon/eta*k^2	210301.871	[550095.836, 152139.049]	1123352.151	
Fk^2/Dk=beta^3/eta*epsilon	204043.423	[164952.747, 91213.747]	119084.449	
beta^2/epsilon	810.274	[90.615, 81.501]	1136.872	
k/beta	0.000519	[0.000145, 0.000113]	0.000373	
k/epsilon	0.000432	[0.000371, 0.0002]	0.000603	
best fit_MedianLifetime	75.59	0.51	75.59	
best fit_MaxLifetime	110.0	0	110.0	
data_MedianLifetime	80.0	0.5	80.0	
data_MaxLifetime	109.0	0	109.0	

	percentile_16	\
xc/eta	[3.571, 3.722]	
beta/eta	[148.258, 149.898]	
xc^2/epsilon	[0.458, 0.477]	
xc	[20.363, 21.573]	
ExtH	[6.186, 6.198]	
eta	[8.53, 9.053]	
beta	[1301.737, 1379.418]	
epsilon	[1539.906, 1723.827]	
sqrt(xc/eta)	[1.89, 1.929]	
s= eta^0.5*xc^1.5/epsilon	[0.246, 0.252]	
beta*xc/epsilon	[19.193, 19.387]	
eta*xc/epsilon	[0.133, 0.133]	
Fx=beta^2/eta*xc	[7217.537, 8123.366]	
Dx =beta*epsilon/eta*xc^2	[325.819, 343.034]	
Pk=beta*k/epsilon	[0.368, 0.393]	
Fk=beta^2/eta*k	[391182.294, 414665.013]	
Dk =beta*epsilon/eta*k^2	[1064861.275, 1185055.824]	
Fk^2/Dk=beta^3/eta*epsilon	[115176.064, 123125.462]	
beta^2/epsilon	[1104.441, 1170.256]	

```
k/beta                                          [0.000362, 0.000384]
k/epsilon                                        [0.00057, 0.000639]
best fit_MedianLifetime     [75.10000000000001, 76.10000000000001]
best fit_MaxLifetime                                  [110.0, 110.0]
data_MedianLifetime                                    [79.51, 80.5]
data_MaxLifetime                                      [109.0, 109.0]

                                                      percentile_50  \
xc/eta                                                  [3.571, 3.88]
beta/eta                                             [145.031, 149.898]
xc^2/epsilon                                            [0.438, 0.477]
xc                                                    [20.363, 22.854]
ExtH                                                    [6.186, 6.198]
eta                                                     [8.038, 9.053]
beta                                                 [1301.737, 1379.418]
epsilon                                                [980.61, 1929.715]
sqrt(xc/eta)                                             [1.89, 1.97]
s= eta^0.5*xc^1.5/epsilon                               [0.246, 0.258]
beta*xc/epsilon                                       [19.193, 19.387]
eta*xc/epsilon                                          [0.133, 0.134]
Fx=beta^2/eta*xc                                     [6412.716, 8618.061]
Dx =beta*epsilon/eta*xc^2                              [309.467, 343.034]
Pk=beta*k/epsilon                                        [0.368, 0.42]
Fk=beta^2/eta*k                                [391182.294, 414665.013]
Dk =beta*epsilon/eta*k^2                      [1064861.275, 1318817.145]
Fk^2/Dk=beta^3/eta*epsilon                     [115176.064, 131623.524]
beta^2/epsilon                                    [1042.328, 1170.256]
k/beta                                            [0.000342, 0.000384]
k/epsilon                                         [0.00051, 0.000639]
best fit_MedianLifetime     [75.10000000000001, 76.10000000000001]
best fit_MaxLifetime                                  [110.0, 110.0]
data_MedianLifetime                                    [79.51, 80.5]
data_MaxLifetime                                      [109.0, 109.0]

                                                      percentile_95  \
xc/eta                                                  [3.153, 3.88]
beta/eta                                             [143.443, 153.234]
xc^2/epsilon                                             [0.438, 0.52]
xc                                                    [19.221, 25.65]
ExtH                                                    [6.163, 6.211]
eta                                                     [7.575, 9.607]
beta                                                 [1228.43, 1461.735]
epsilon                                              [699.034, 1929.715]
sqrt(xc/eta)                                            [1.776, 2.011]
s= eta^0.5*xc^1.5/epsilon                               [0.241, 0.264]
beta*xc/epsilon                                       [19.002, 19.582]
eta*xc/epsilon                                          [0.131, 0.135]
```

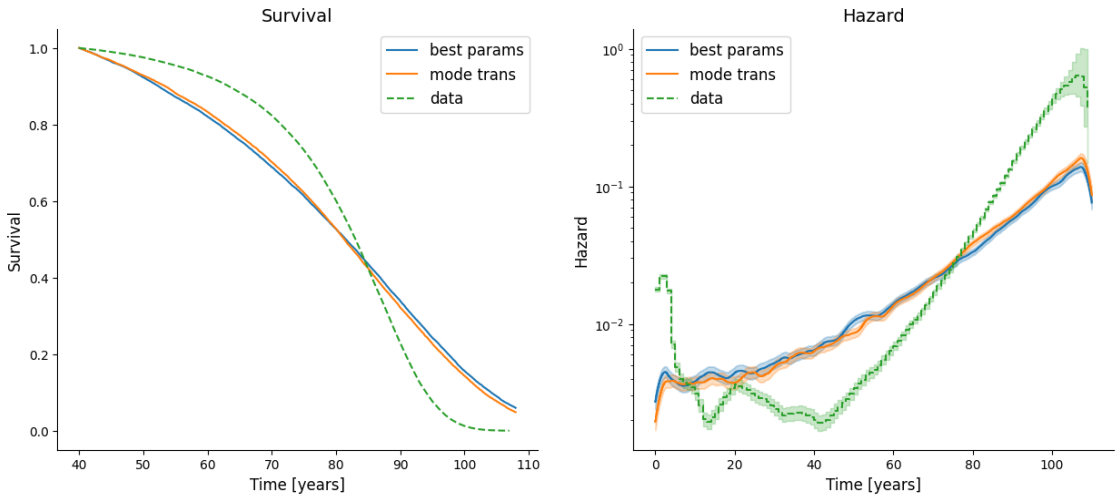
Fx=beta^2/eta*xc	[5062.301, 8618.061]
Dx =beta*epsilon/eta*xc^2	[293.936, 361.159]
Pk=beta*k/epsilon	[0.344, 0.514]
Fk=beta^2/eta*k	[369029.414, 414665.013]
Dk =beta*epsilon/eta*k^2	[406706.444, 1467676.566]
Fk^2/Dk=beta^3/eta*epsilon	[100783.851, 140708.119]
beta^2/epsilon	[736.504, 1239.992]
k/beta	[0.000323, 0.000407]
k/epsilon	[0.00029, 0.000715]
best fit_MedianLifetime	[75.10000000000001, 76.10000000000001]
best fit_MaxLifetime	[110.0, 110.0]
data_MedianLifetime	[79.51, 80.5]
data_MaxLifetime	[109.0, 109.0]

	max_likelihood	mode_overall
xc/eta	3.144	3.426
beta/eta	157.871	146.287
xc^2/epsilon	0.426	0.456
xc	7.987	19.225
ExtH	6.188	6.152
eta	2.54	9.035
beta	401.038	1359.399
epsilon	149.785	1675.473
sqrt(xc/eta)	1.773	1.851
s= eta^0.5*xc^1.5/epsilon	0.24	0.247
beta*xc/epsilon	21.384	19.488
eta*xc/epsilon	0.135	0.135
Fx=beta^2/eta*xc	7927.305	7927.305
Dx =beta*epsilon/eta*xc^2	370.72	370.72
Pk=beta*k/epsilon	1.339	0.218
Fk=beta^2/eta*k	126624.821	425770.633
Dk =beta*epsilon/eta*k^2	94587.272	94587.272
Fk^2/Dk=beta^3/eta*epsilon	169513.773	169513.773
beta^2/epsilon	1073.746	832.032
k/beta	0.00125	0.000609
k/epsilon	0.00334	0.000617
best fit_MedianLifetime	75.59	NaN
best fit_MaxLifetime	110.0	NaN
data_MedianLifetime	80.0	NaN
data_MaxLifetime	109.0	NaN

5 5. Fits of simulations to data

best params is the sample with highest likelihood. mode trans is the 4D posterior mode in the transformed space of x_c/η, β/η, x_c^2/ϵ, x_c

```
Text(0, 0.5, 'Hazard')
```




```
Text(0, 0.5, 'Prob density')
```