Denmark_F_1900_post.csv_run_20_20250525_214811

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/Denmark_F_1900_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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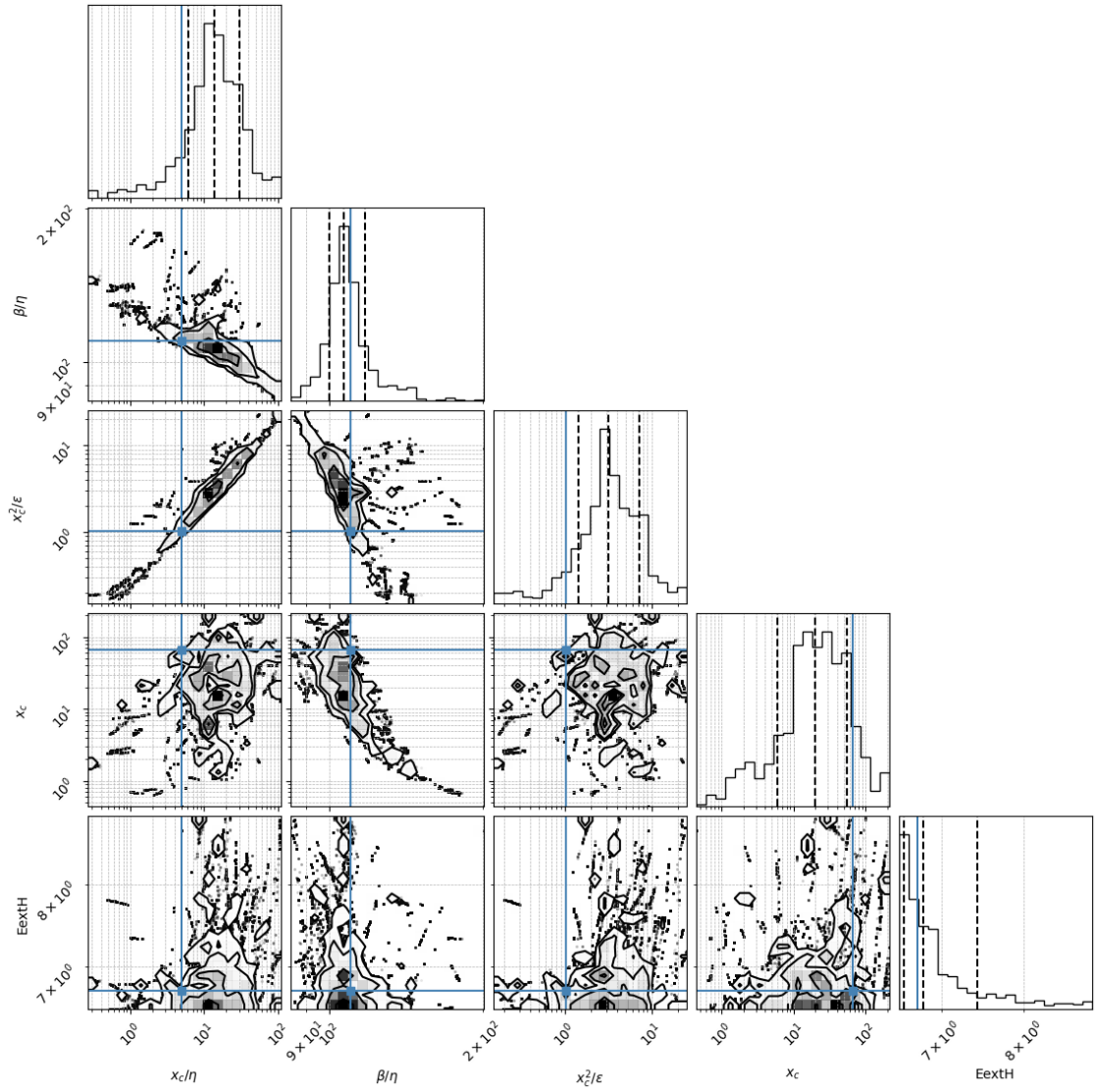
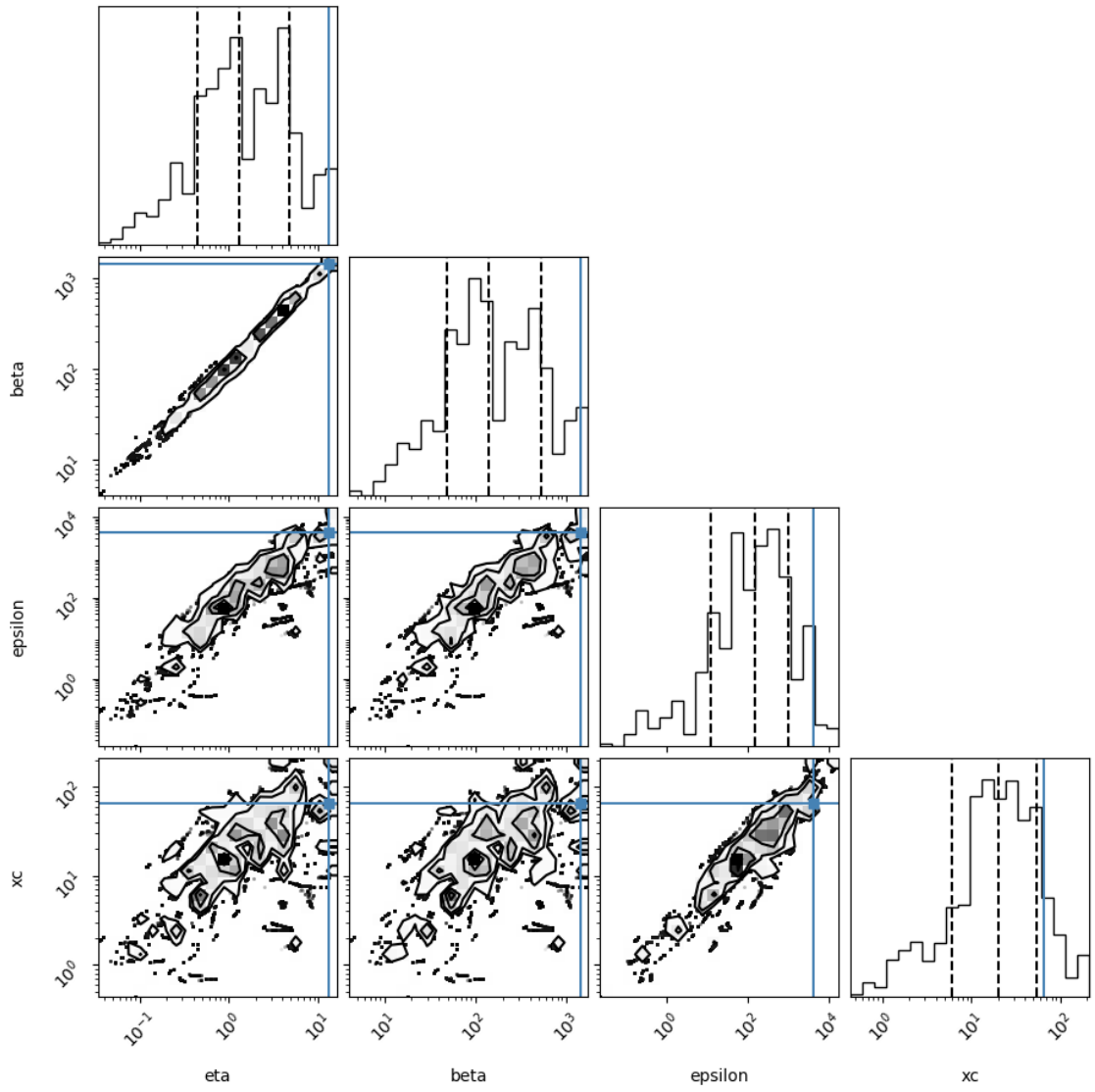
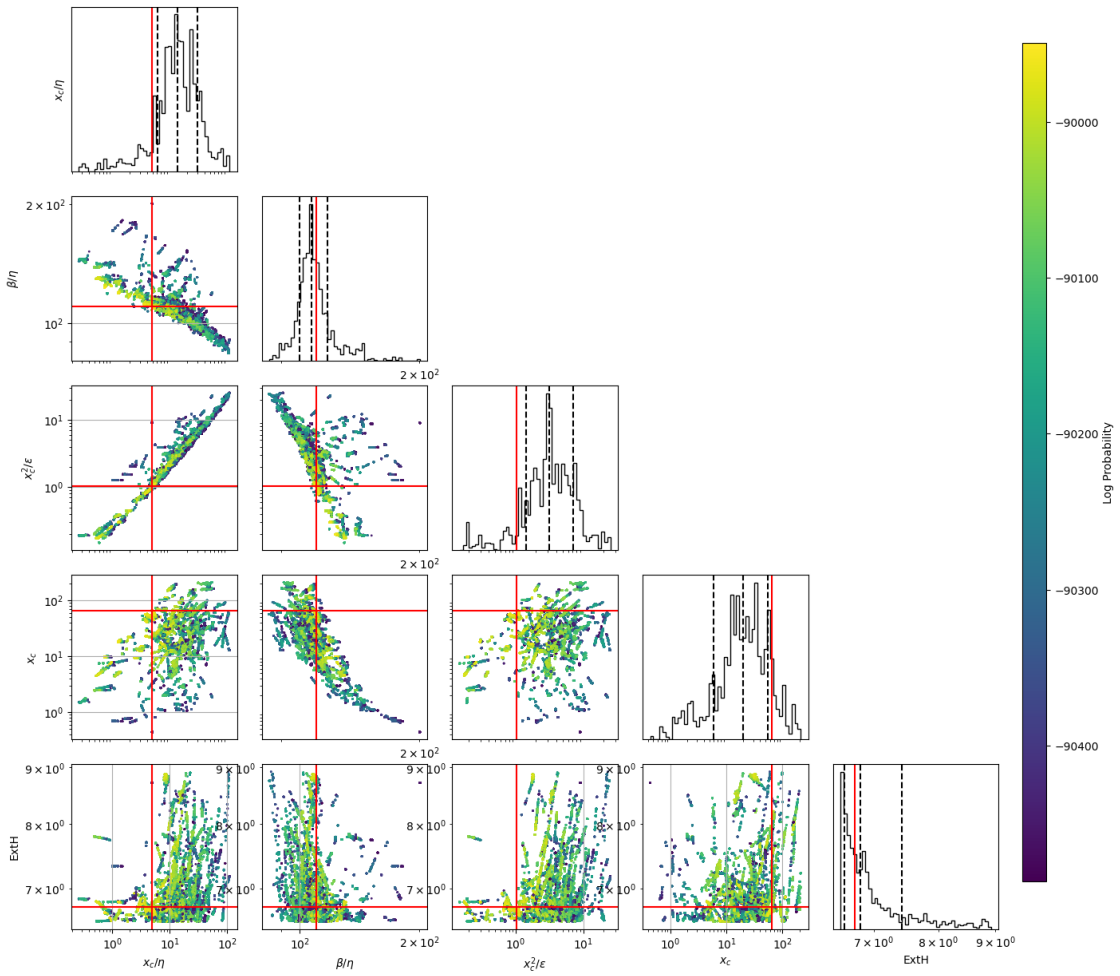

x_c/η
β/η
x_c^2/ε
x_c
EextH



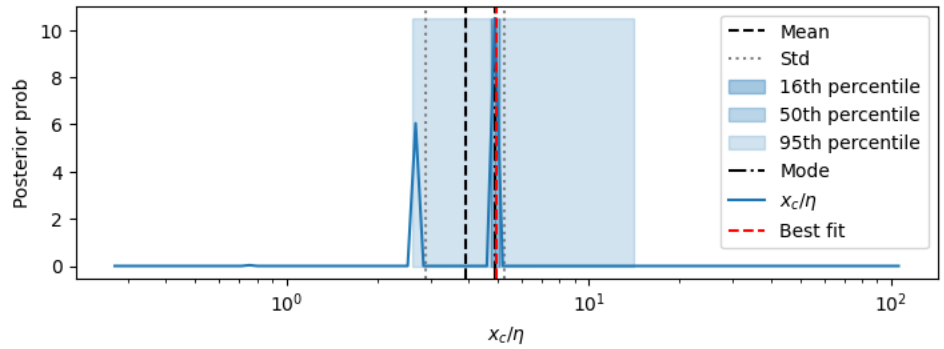
2 2. Heat map corner plot of raw samples

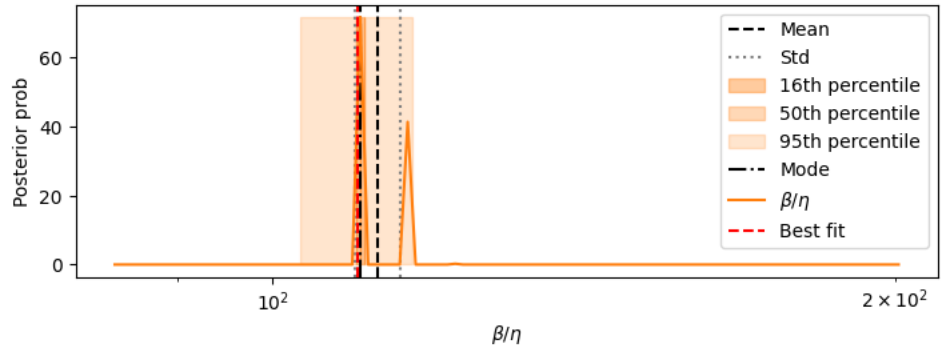
This plot shows all the raw sample points and their lnprobability

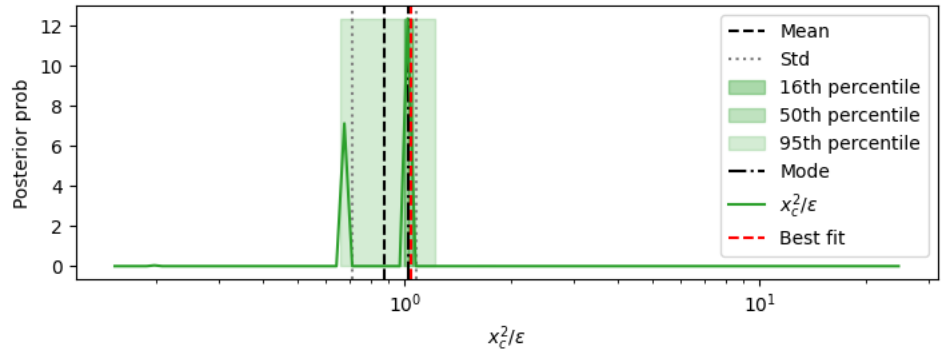


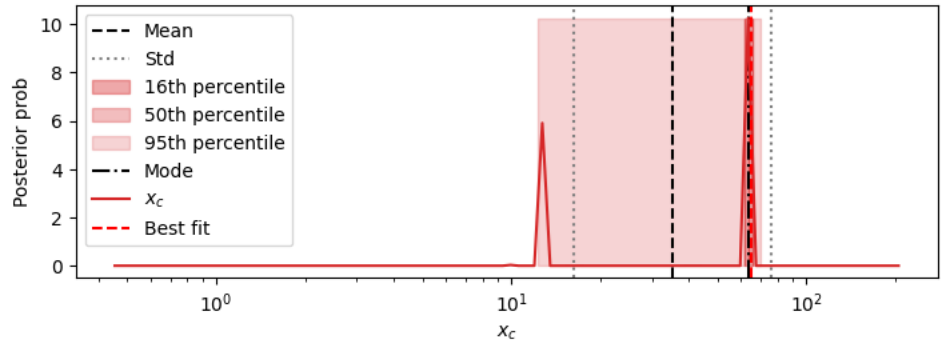
3 3. Posterior distributions of parameters

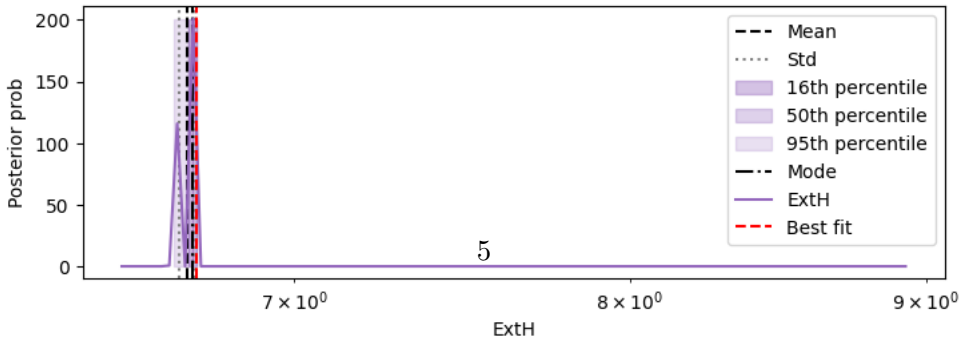
1d marginalizations of posterior distributions. we use a grid of size nbins=100-150


Posterior prob
x_c/η
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit

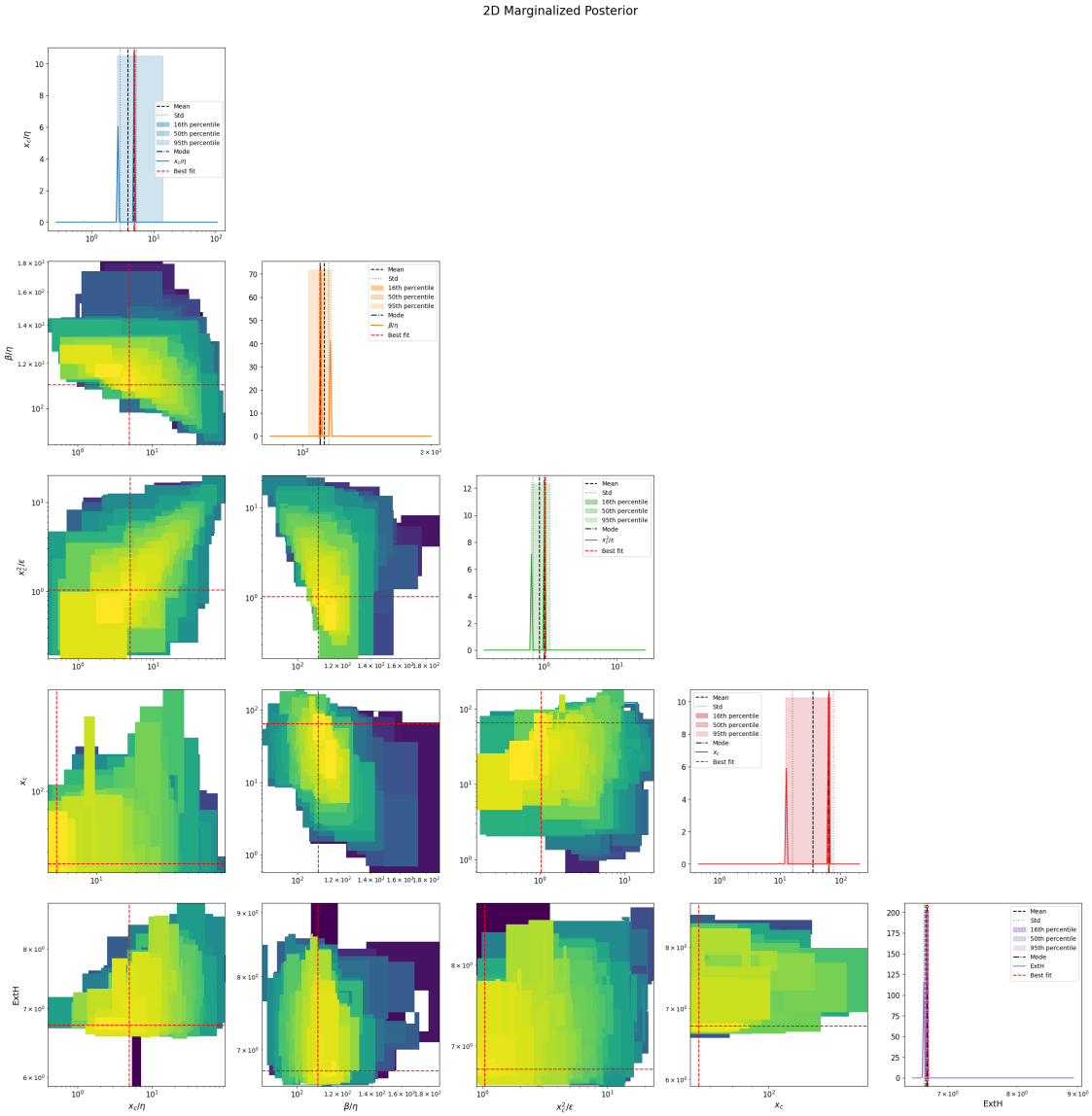

Posterior prob
β/η
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
β/η
Best fit


Posterior prob
x_c^2/ε
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c^2/ε
Best fit


Posterior prob
x_c
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c
Best fit


Posterior prob
ExtH
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
ExtH
Best fit

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	\
xc/eta	3.912	[1.366, 1.012]	
beta/eta	112.458	[2.931, 2.857]	
xc^2/epsilon	0.875	[0.203, 0.165]	
xc	35.237	[41.234, 19.0]	
ExtH	6.708	[0.0205, 0.0205]	
eta	9.033	[5.945, 3.585]	
beta	1009.853	[553.89, 357.698]	
epsilon	1559.102	[4230.752, 1139.264]	
sqrt(xc/eta)	1.981	[0.31, 0.268]	
s= eta^0.5*xc^1.5/epsilon	0.436	[0.0332, 0.0308]	
beta*xc/epsilon	24.936	[2.329, 2.13]	
eta*xc/epsilon	0.241	[0.0108, 0.0103]	
Fx=beta^2/eta*xc	4524.109	[1215.659, 958.188]	
Dx =beta*epsilon/eta*xc^2	163.884	[31.756, 26.602]	
Pk=beta*k/epsilon	0.344	[0.453, 0.195]	
Fk=beta^2/eta*k	233553.706	[129123.021, 83151.627]	
Dk =beta*epsilon/eta*k^2	665703.453	[1664757.378, 475543.172]	
Fk^2/Dk=beta^3/eta*epsilon	79792.509	[43281.845, 28060.818]	
beta^2/epsilon	688.551	[378.077, 244.064]	
k/beta	0.000495	[0.000271, 0.000175]	
k/epsilon	0.00032	[0.00087, 0.000234]	
best fit_MedianLifetime	75.5	0.51	
best fit_MaxLifetime	107.18	0	
data_MedianLifetime	75.0	0.51	
data_MaxLifetime	106.0	0	

	mode	percentile_16	\
xc/eta	4.606	[4.469, 4.747]	
beta/eta	110.286	[109.801, 110.773]	
xc^2/epsilon	0.83	[0.809, 0.852]	
xc	52.796	[51.19, 54.452]	
ExtH	6.681	[6.67, 6.692]	
eta	12.465	[12.086, 12.856]	
beta	1324.654	[1285.164, 1365.358]	
epsilon	2804.541	[2619.885, 3002.213]	
sqrt(xc/eta)	2.146	[2.114, 2.179]	
s= eta^0.5*xc^1.5/epsilon	0.461	[0.454, 0.468]	
beta*xc/epsilon	24.034	[23.665, 24.408]	
eta*xc/epsilon	0.222	[0.219, 0.224]	
Fx=beta^2/eta*xc	2941.086	[2838.863, 3046.989]	
Dx =beta*epsilon/eta*xc^2	145.071	[141.112, 149.142]	
Pk=beta*k/epsilon	0.218	[0.208, 0.228]	
Fk=beta^2/eta*k	415645.061	[403179.947, 428495.558]	
Dk =beta*epsilon/eta*k^2	1168907.145	[1095268.258, 1247497.043]	
Fk^2/Dk=beta^3/eta*epsilon	57634.261	[55158.599, 60221.037]	
beta^2/epsilon	493.946	[473.956, 514.778]	

k/beta	0.000355	[0.000344, 0.000366]
k/epsilon	0.000178	[0.000166, 0.000191]
best fit_MedianLifetime	75.5	[75.01, 76.01]
best fit_MaxLifetime	107.18	[107.18, 107.18]
data_MedianLifetime	75.0	[74.51, 75.51]
data_MaxLifetime	106.0	[106.0, 106.0]

	percentile_50 \
xc/eta	[4.469, 5.042]
beta/eta	[109.801, 110.773]
xc^2/epsilon	[0.769, 0.897]
xc	[51.19, 57.922]
ExtH	[6.67, 6.713]
eta	[11.362, 12.856]
beta	[1285.164, 1450.556]
epsilon	[2286.245, 3002.213]
sqrt(xc/eta)	[2.114, 2.245]
s= eta^0.5*xc^1.5/epsilon	[0.44, 0.468]
beta*xc/epsilon	[23.665, 24.408]
eta*xc/epsilon	[0.214, 0.23]
Fx=beta^2/eta*xc	[2644.954, 3270.372]
Dx =beta*epsilon/eta*xc^2	[133.514, 149.142]
Pk=beta*k/epsilon	[0.208, 0.25]
Fk=beta^2/eta*k	[356947.316, 428495.558]
Dk =beta*epsilon/eta*k^2	[1095268.258, 1247497.043]
Fk^2/Dk=beta^3/eta*epsilon	[55158.599, 60221.037]
beta^2/epsilon	[473.956, 559.116]
k/beta	[0.000344, 0.000389]
k/epsilon	[0.000166, 0.000219]
best fit_MedianLifetime	[75.01, 76.01]
best fit_MaxLifetime	[107.18, 107.18]
data_MedianLifetime	[74.51, 75.51]
data_MaxLifetime	[106.0, 106.0]

	percentile_95	max_likelihood \
xc/eta	[3.962, 5.356]	4.954
beta/eta	[108.838, 111.753]	109.938
xc^2/epsilon	[0.769, 1.101]	1.037
xc	[42.53, 57.922]	65.181
ExtH	[6.649, 6.734]	6.733
eta	[10.681, 13.675]	13.157
beta	[1209.679, 1739.398]	1446.407
epsilon	[258.567, 3942.397]	4096.74
sqrt(xc/eta)	[1.99, 2.314]	2.226
s= eta^0.5*xc^1.5/epsilon	[0.427, 0.482]	0.466
beta*xc/epsilon	[22.945, 25.174]	23.013
eta*xc/epsilon	[0.214, 0.241]	0.209

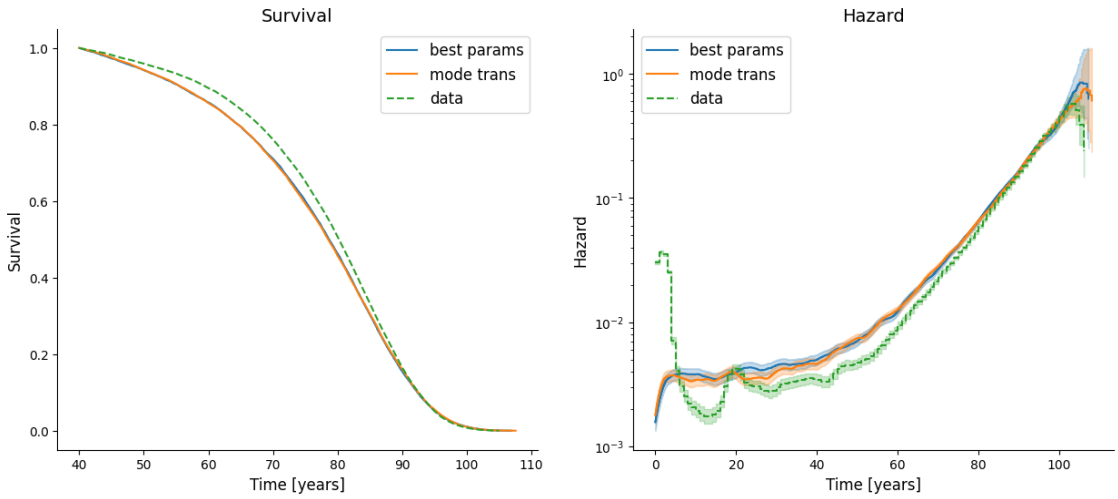
Fx=beta^2/eta*xc	[2139.139, 3510.133]	2439.613
Dx =beta*epsilon/eta*xc^2	[95.787, 157.629]	106.011
Pk=beta*k/epsilon	[0.19, 0.274]	0.177
Fk=beta^2/eta*k	[279778.616, 428495.558]	318031.183
Dk =beta*epsilon/eta*k^2	[119866.302, 1618369.076]	1801554.676
Fk^2/Dk=beta^3/eta*epsilon	[50521.732, 65748.103]	56142.528
beta^2/epsilon	[436.372, 607.273]	510.673
k/beta	[0.000287, 0.000413]	0.000346
k/epsilon	[0.000145, 0.00169]	0.000122
best fit_MedianLifetime	[75.01, 76.01]	75.5
best fit_MaxLifetime	[107.18, 107.18]	107.18
data_MedianLifetime	[74.51, 75.51]	75.0
data_MaxLifetime	[106.0, 106.0]	106.0

	mode_overall
xc/eta	4.954
beta/eta	109.938
xc^2/epsilon	1.037
xc	65.181
ExtH	6.733
eta	13.157
beta	1446.407
epsilon	4096.74
sqrt(xc/eta)	2.226
s= eta^0.5*xc^1.5/epsilon	0.466
beta*xc/epsilon	23.013
eta*xc/epsilon	0.242
Fx=beta^2/eta*xc	4924.89
Dx =beta*epsilon/eta*xc^2	174.766
Pk=beta*k/epsilon	0.177
Fk=beta^2/eta*k	318031.183
Dk =beta*epsilon/eta*k^2	1801554.676
Fk^2/Dk=beta^3/eta*epsilon	56142.528
beta^2/epsilon	510.673
k/beta	0.000346
k/epsilon	0.000122
best fit_MedianLifetime	NaN
best fit_MaxLifetime	NaN
data_MedianLifetime	NaN
data_MaxLifetime	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')
```