Denmark_M_1890_post.csv_run_18_20250525_214315

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_M_1890_post.csv
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Reading Humans_M
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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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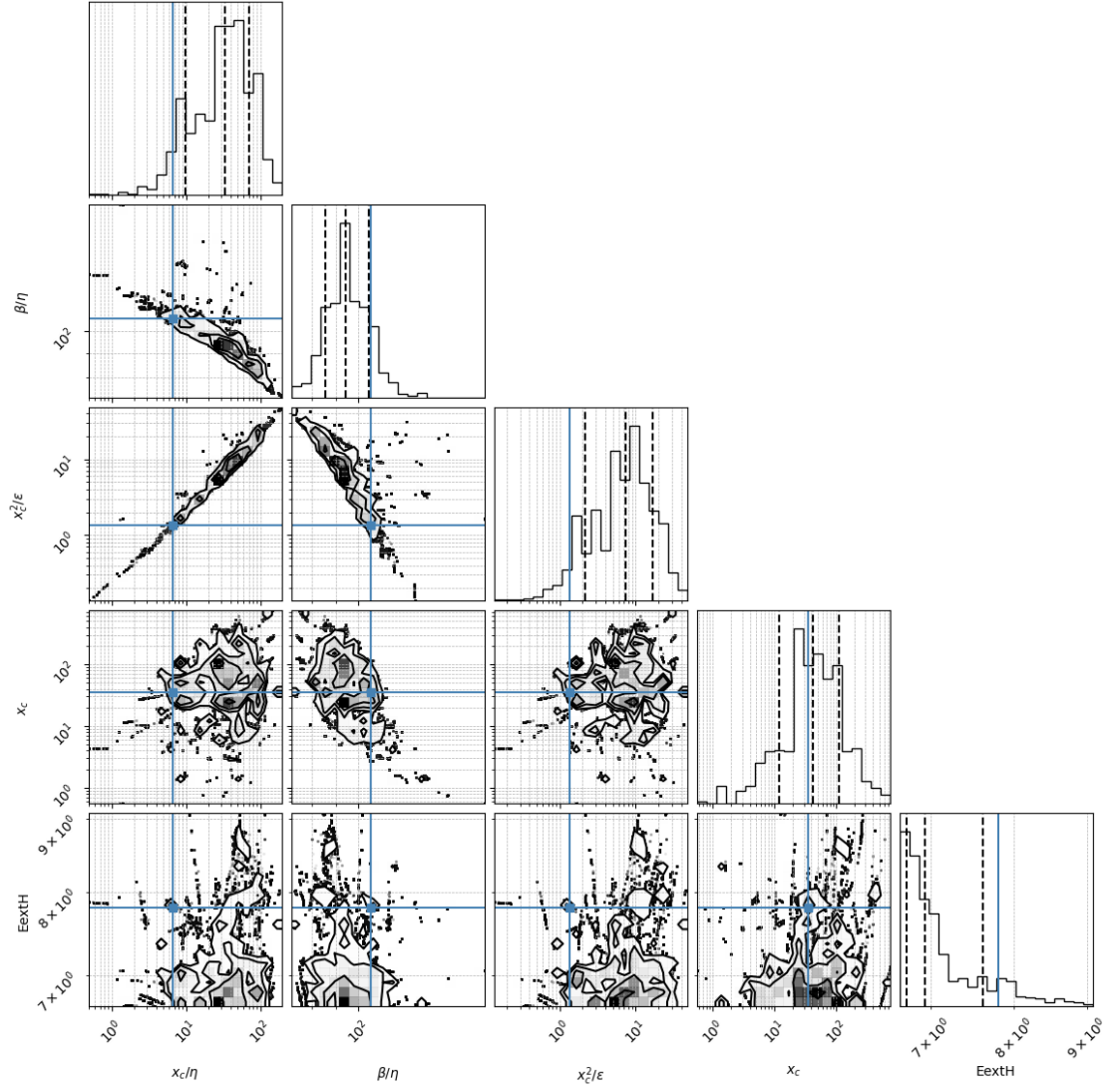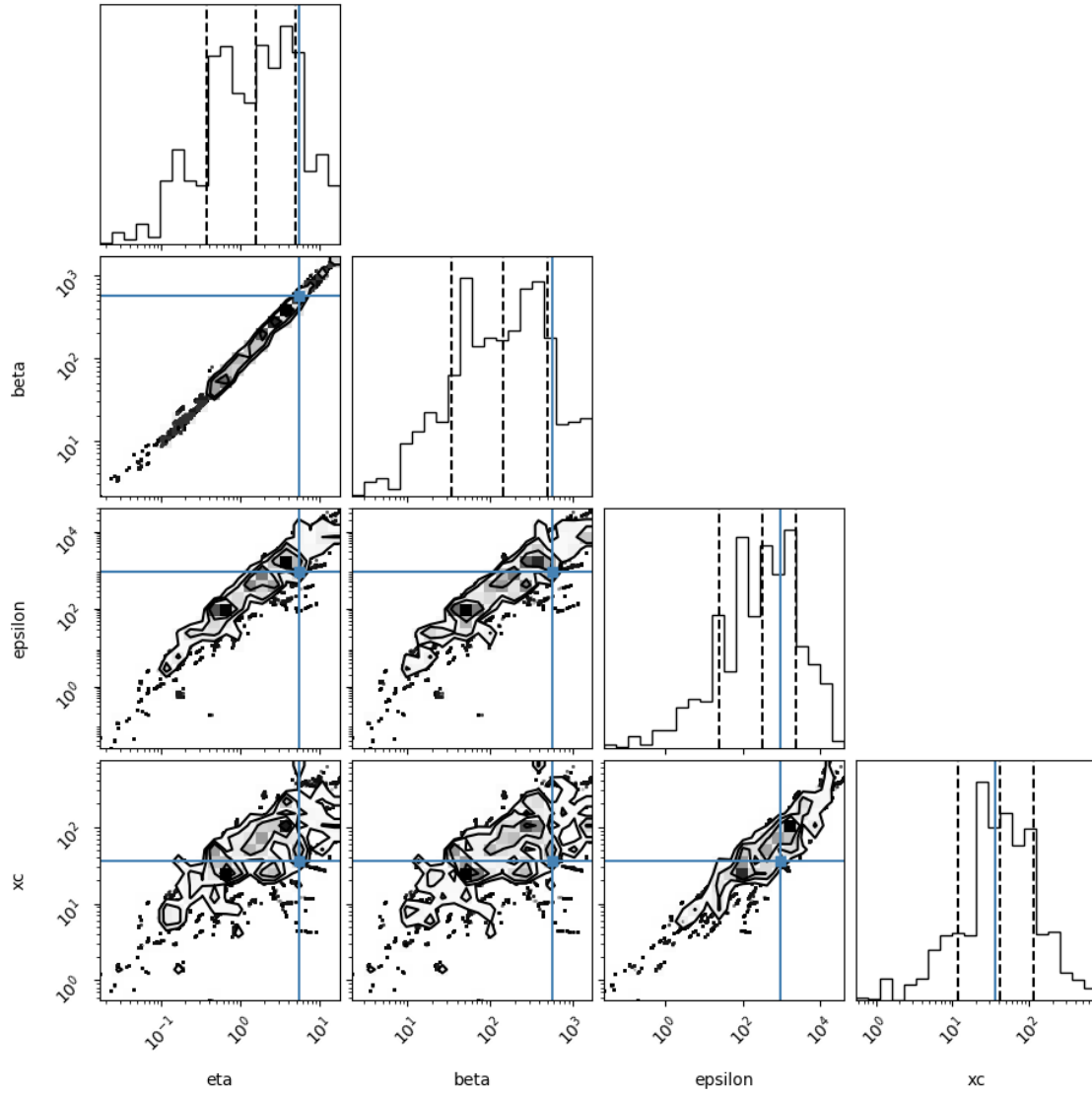
2   2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability
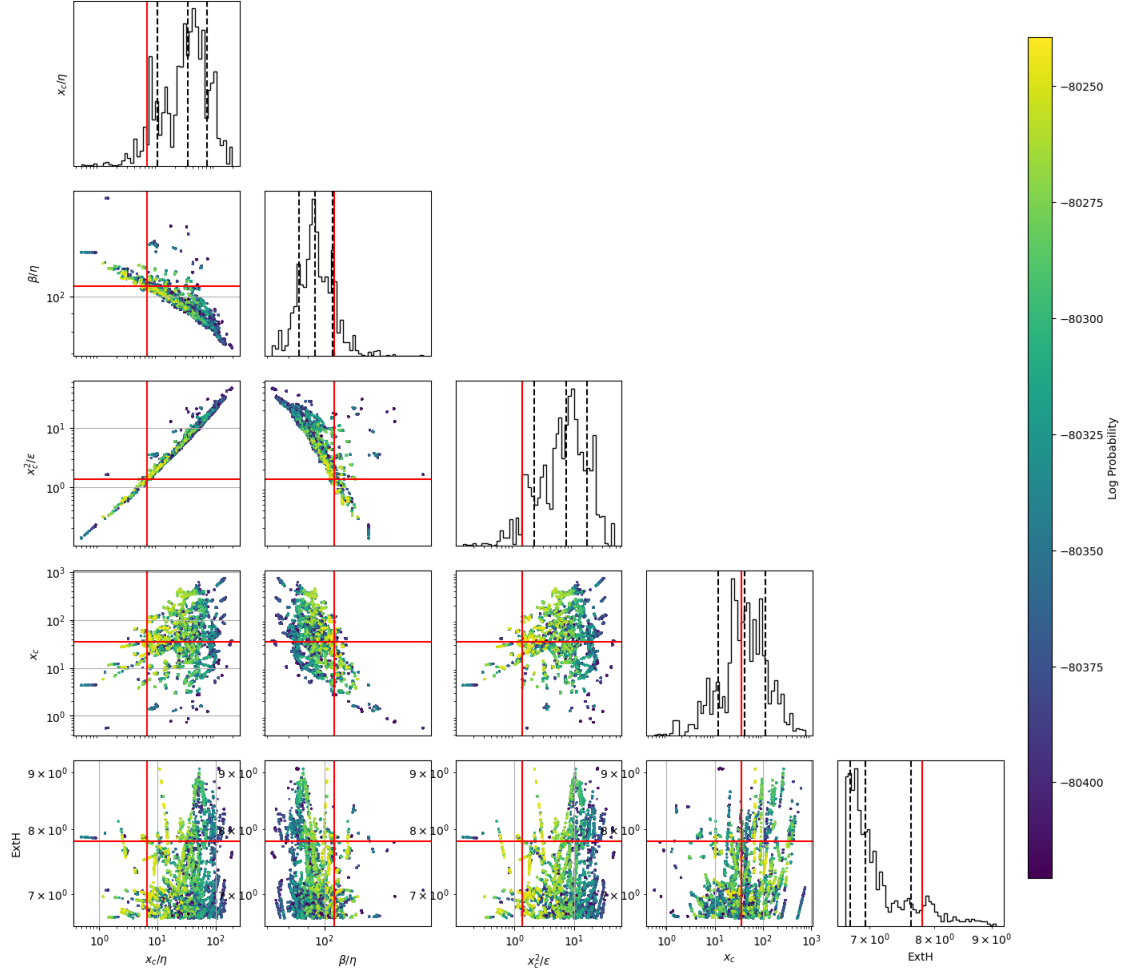
3 3. Posterior distributions of parameters

1d marginalizations of posterior distributions. we use a grid of size nbins=100-150
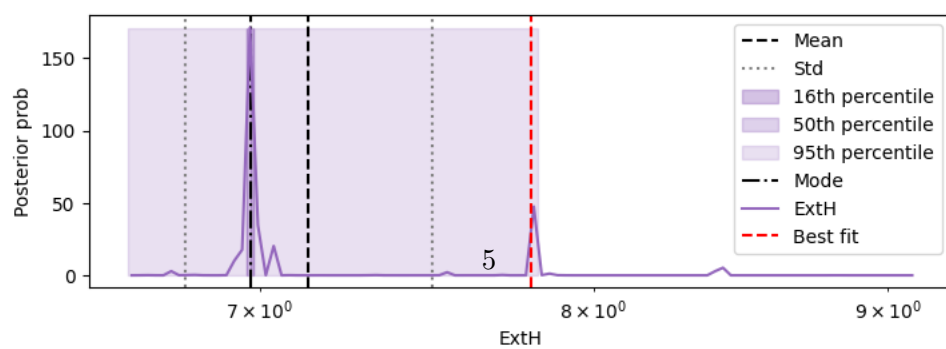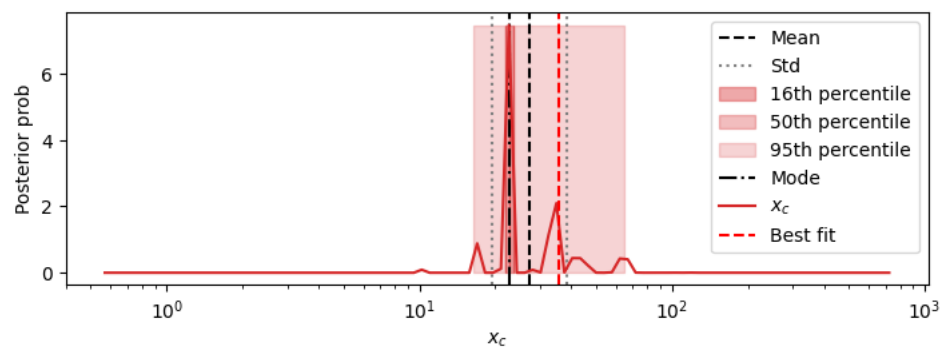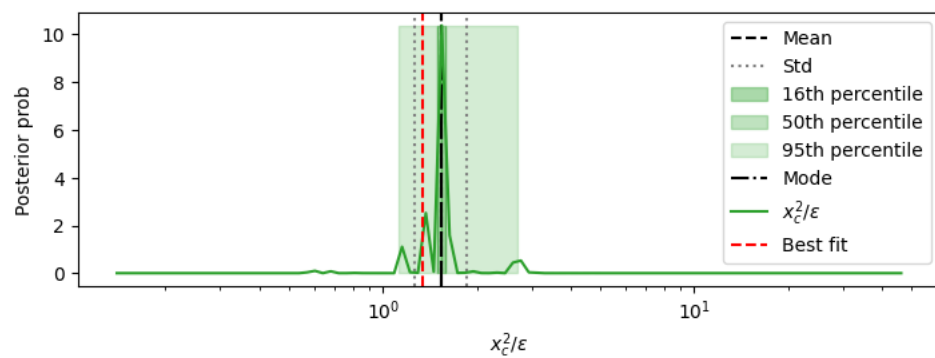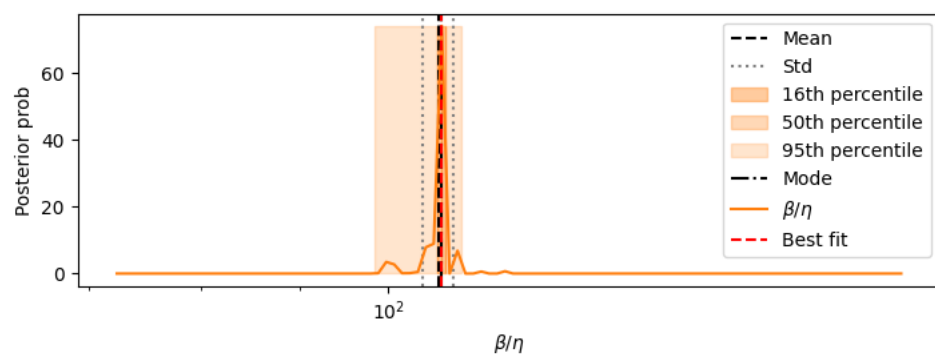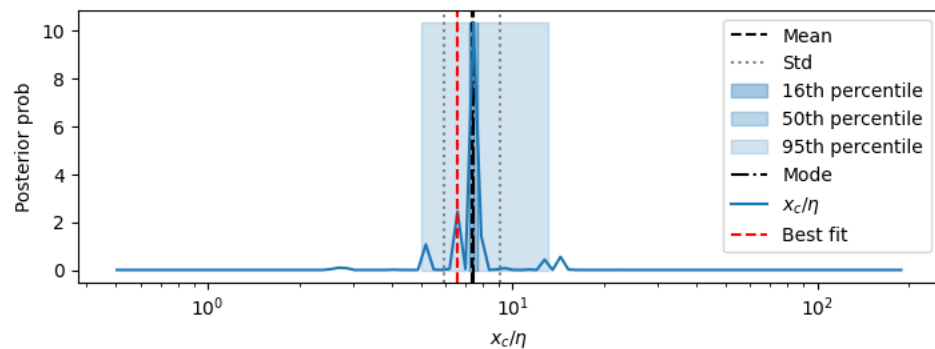
2D marginalizations of posterior distributions

Rescaling the samples TIME by 365

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

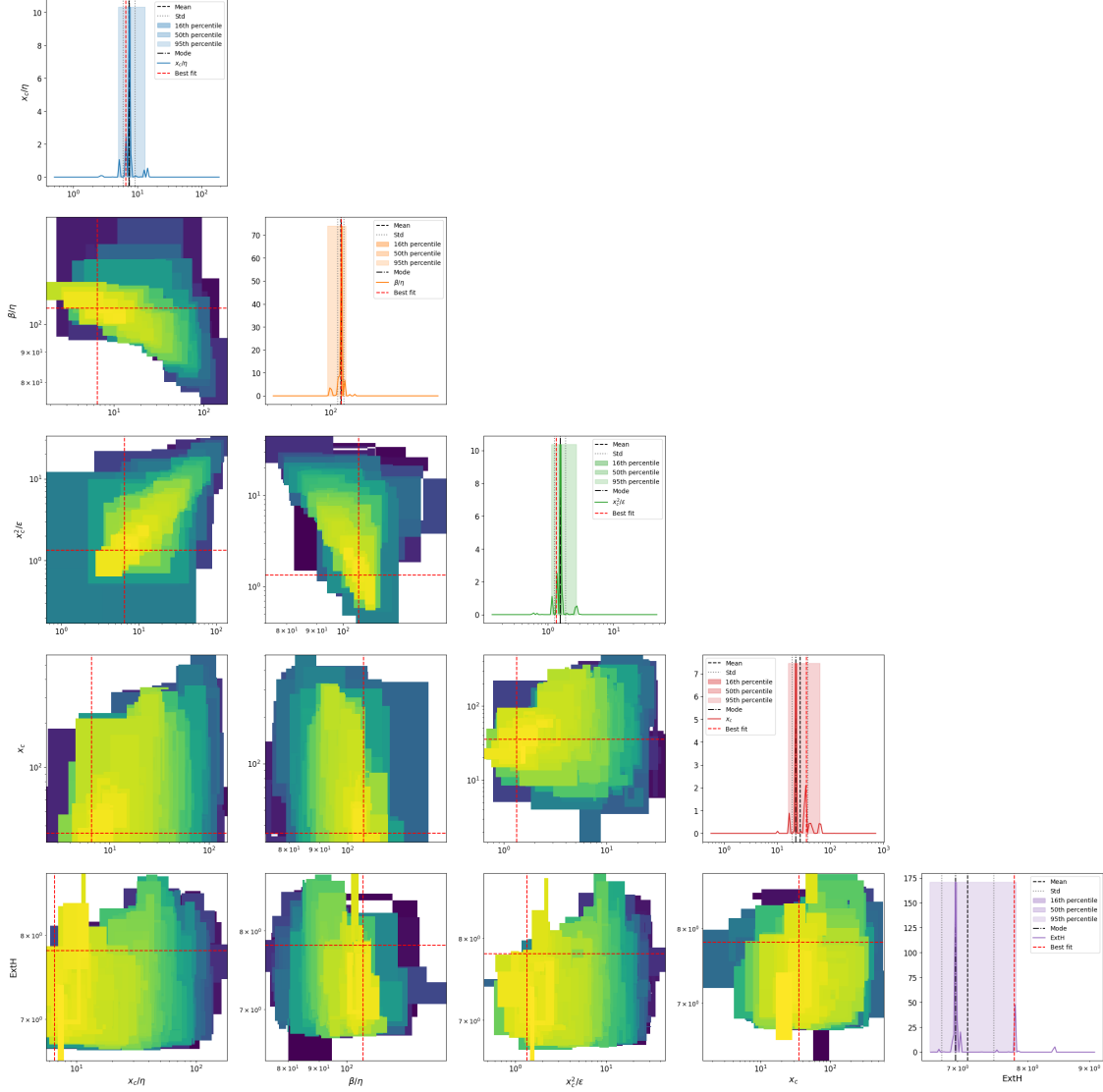|	mean	std	mode \
xc/eta	7.362	[1.766, 1.424]	7.44
beta/eta	106.089	[1.94, 1.906]	105.53
xc^2/epsilon	1.533	[0.33, 0.271]	1.544
xc	27.304	[10.981, 7.832]	37.508
ExtH	7.138	[0.361, 0.344]	6.973
eta	3.769	[0.965, 0.768]	3.714
beta	389.699	[95.213, 76.518]	359.311
epsilon	501.818	[449.244, 237.039]	339.138
sqrt(xc/eta)	2.738	[0.332, 0.296]	2.728
s= eta^0.5*xc^1.5/epsilon	0.574	[0.059, 0.0535]	0.571
beta*xc/epsilon	22.153	[0.905, 0.869]	22.24
eta*xc/epsilon	0.209	[0.00533, 0.0052]	0.206
Fx=beta^2/eta*xc	1481.832	[436.447, 337.147]	1566.64
Dx =beta*epsilon/eta*xc^2	66.056	[15.762, 12.725]	66.772
Pk=beta*k/epsilon	0.415	[0.211, 0.14]	0.274
Fk=beta^2/eta*k	78691.446	[15596.863, 13016.881]	86422.329
Dk =beta*epsilon/eta*k^2	195620.158	[140118.217, 81640.795]	523849.586
Fk^2/Dk=beta^3/eta*epsilon	32818.572	[12005.357, 8789.918]	31856.079
beta^2/epsilon	307.108	[83.473, 65.634]	316.631
k/beta	0.00128	[0.000316, 0.000254]	0.00139
k/epsilon	0.00104	[0.000828, 0.00046]	0.00147
best fit_MedianLifetime	71.71	0.51	71.71
best fit_MaxLifetime	104.54	0	104.54
data_MedianLifetime	68.0	0.51	68.0
data_MaxLifetime	106.0	0	106.0

	percentile_16	percentile_50 \
xc/eta	[7.221, 7.667]	[6.801, 8.14]
beta/eta	[105.034, 106.028]	[104.049, 106.028]
xc^2/epsilon	[1.499, 1.59]	[1.414, 1.686]
xc	[36.178, 38.887]	[33.658, 41.799]
ExtH	[6.963, 6.984]	[6.963, 7.007]
eta	[3.587, 3.845]	[3.345, 4.123]
beta	[347.46, 397.348]	[324.916, 454.398]
epsilon	[273.693, 364.262]	[237.241, 559.291]
sqrt(xc/eta)	[2.687, 2.769]	[2.608, 2.853]
s= eta^0.5*xc^1.5/epsilon	[0.563, 0.58]	[0.546, 0.597]
beta*xc/epsilon	[21.944, 22.54]	[21.363, 22.54]
eta*xc/epsilon	[0.204, 0.208]	[0.204, 0.213]
Fx=beta^2/eta*xc	[1511.333, 1623.97]	[1406.509, 1623.97]
Dx =beta*epsilon/eta*xc^2	[64.651, 68.962]	[64.651, 73.561]
Pk=beta*k/epsilon	[0.261, 0.318]	[0.214, 0.35]
Fk=beta^2/eta*k	[83630.576, 95369.299]	[83630.576, 108755.716]
Dk =beta*epsilon/eta*k^2	[488904.401, 561292.532]	[370931.154, 644398.59]
Fk^2/Dk=beta^3/eta*epsilon	[30381.992, 33401.687]	[27635.294, 36721.511]
beta^2/epsilon	[303.405, 330.433]	[278.588, 330.433]

k/beta	[0.00126, 0.00144]	[0.00118, 0.00154]
k/epsilon	[0.00119, 0.00158]	[0.000893, 0.00211]
best fit_MedianLifetime	[71.22, 72.22]	[71.22, 72.22]
best fit_MaxLifetime	[104.54, 104.54]	[104.54, 104.54]
data_MedianLifetime	[67.5, 68.51]	[67.5, 68.51]
data_MaxLifetime	[106.0, 106.0]	[106.0, 106.0]

	percentile_95	max_likelihood \
xc/eta	[5.683, 9.741]	6.607
beta/eta	[100.2, 108.045]	106.418
xc^2/epsilon	[1.186, 2.694]	1.343
xc	[20.305, 48.292]	35.589
ExtH	[6.919, 7.073]	7.802
eta	[3.12, 5.841]	5.387
beta	[324.916, 635.479]	573.253
epsilon	[237.241, 1521.112]	942.903
sqrt(xc/eta)	[2.456, 3.121]	2.57
s= eta^0.5*xc^1.5/epsilon	[0.515, 0.653]	0.523
beta*xc/epsilon	[20.248, 23.153]	21.637
eta*xc/epsilon	[0.2, 0.217]	0.203
Fx=beta^2/eta*xc	[791.408, 2014.797]	1714.166
Dx =beta*epsilon/eta*xc^2	[53.267, 83.7]	79.225
Pk=beta*k/epsilon	[0.131, 0.471]	0.304
Fk=beta^2/eta*k	[64309.938, 124021.104]	122009.265
Dk =beta*epsilon/eta*k^2	[107054.629, 739809.492]	401368.673
Fk^2/Dk=beta^3/eta*epsilon	[14236.363, 44383.837]	37088.746
beta^2/epsilon	[153.298, 391.927]	348.519
k/beta	[0.000786, 0.00154]	0.000872
k/epsilon	[0.000328, 0.00211]	0.00053
best fit_MedianLifetime	[71.22, 72.22]	71.71
best fit_MaxLifetime	[104.54, 104.54]	104.54
data_MedianLifetime	[67.5, 68.51]	68.0
data_MaxLifetime	[106.0, 106.0]	106.0

	mode_overall
xc/eta	7.458
beta/eta	106.184
xc^2/epsilon	1.573
xc	23.452
ExtH	6.98
eta	3.145
beta	333.91
epsilon	349.616
sqrt(xc/eta)	2.731
s= eta^0.5*xc^1.5/epsilon	0.576
beta*xc/epsilon	22.399
eta*xc/epsilon	0.211

```
Fx=beta^2/eta*xc                 1511.835
Dx =beta*epsilon/eta*xc^2          67.497
Pk=beta*k/epsilon                   0.478
Fk=beta^2/eta*k                 70911.803
Dk =beta*epsilon/eta*k^2       148494.736
Fk^2/Dk=beta^3/eta*epsilon      33863.044
beta^2/epsilon                    318.909
k/beta                             0.0015
k/epsilon                         0.00143
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

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



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

Death Times Distribution