

Sweden_M_1910_hetro_post.csv_run_13_20250525_212345

May 25, 2025

/Users/navehr/Dropbox/naveh/weizmann/uri_alon/aging/code_3

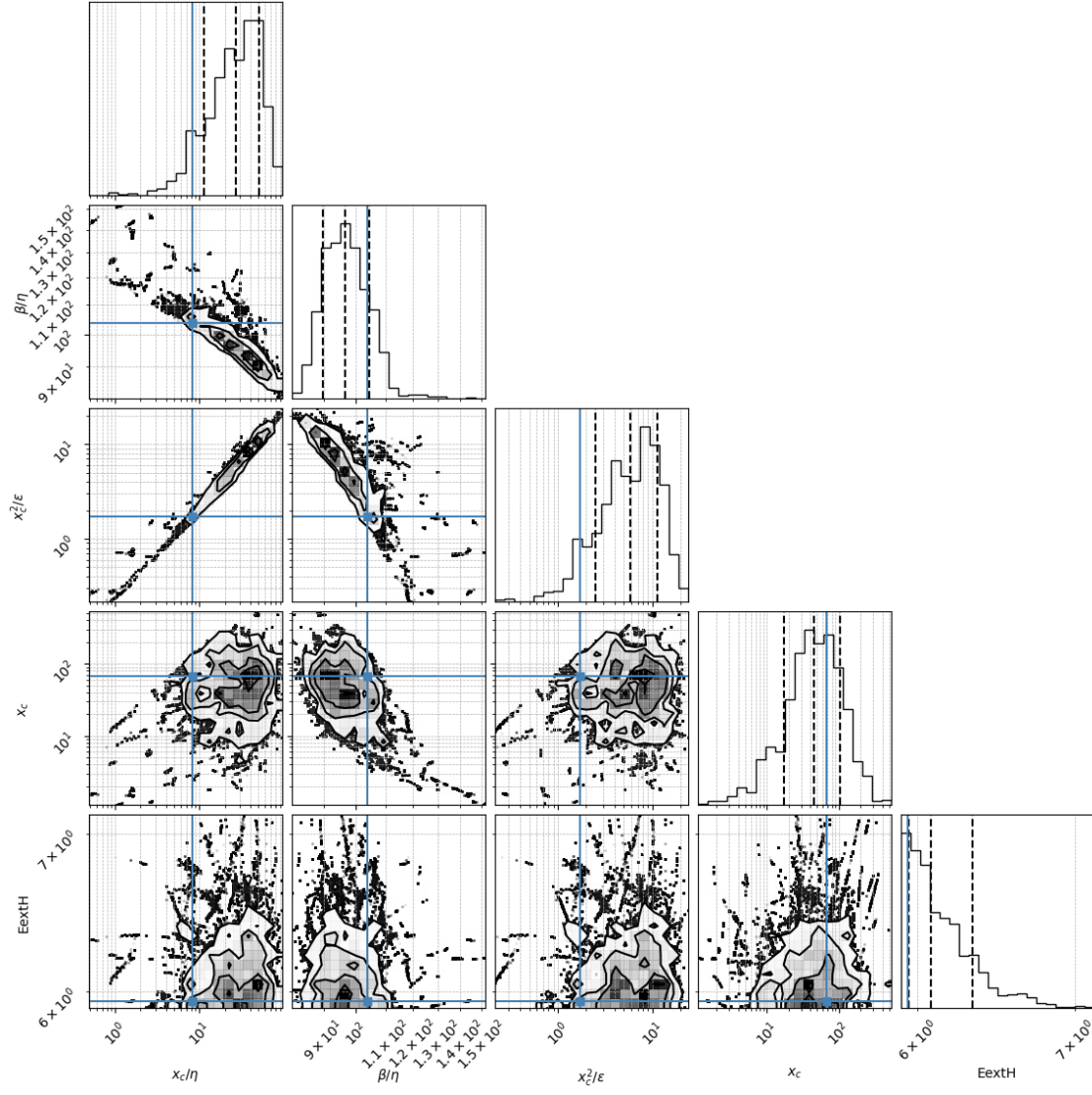
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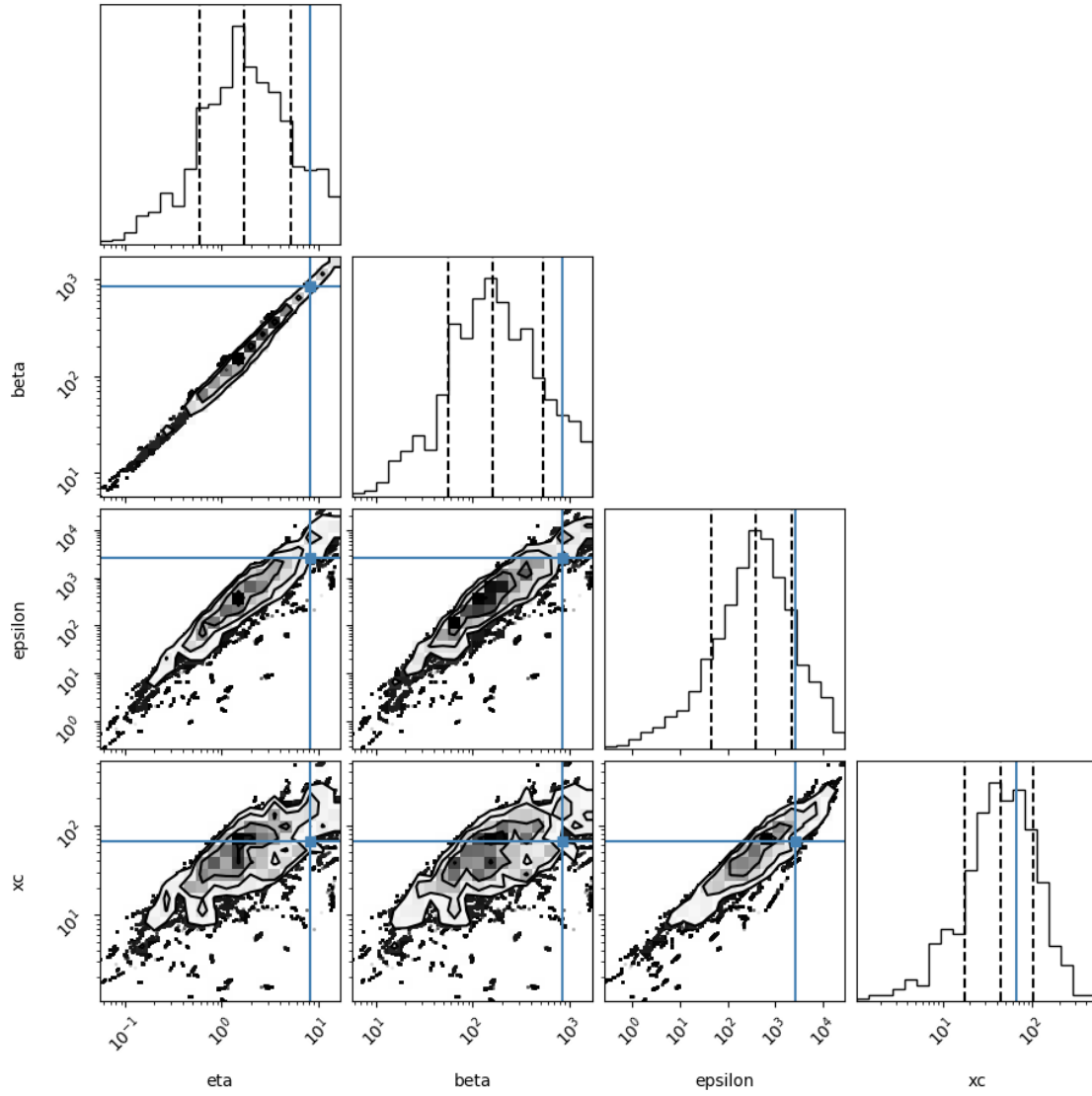
Reading Humans_M

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

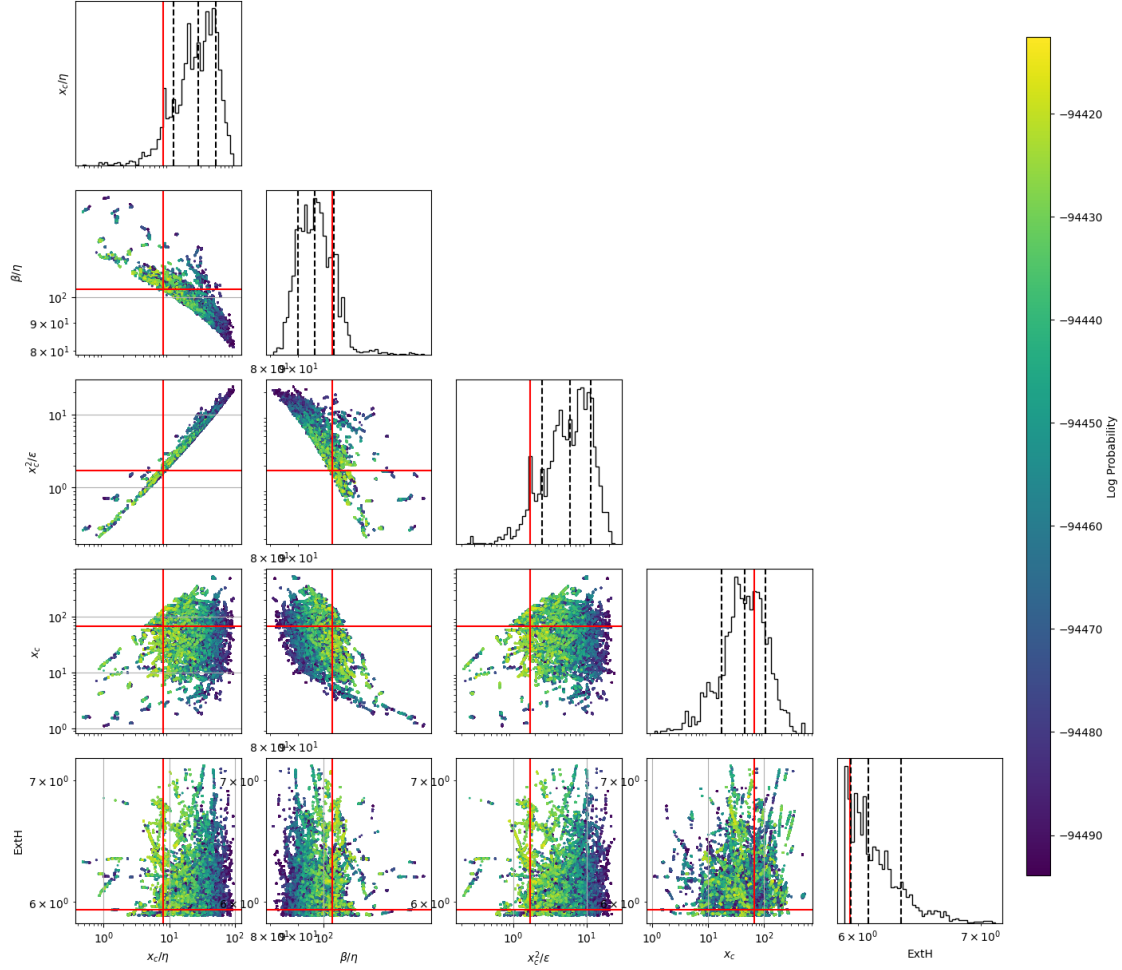
(25,)





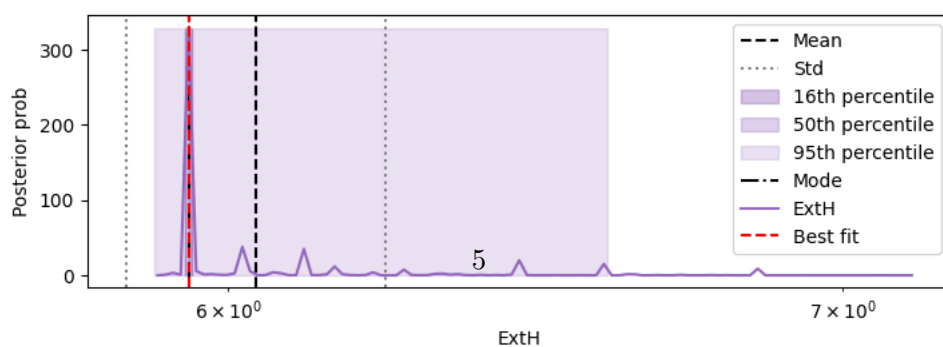
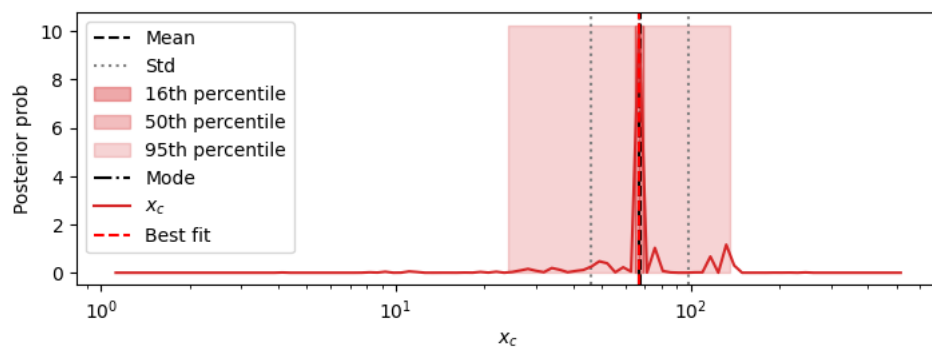
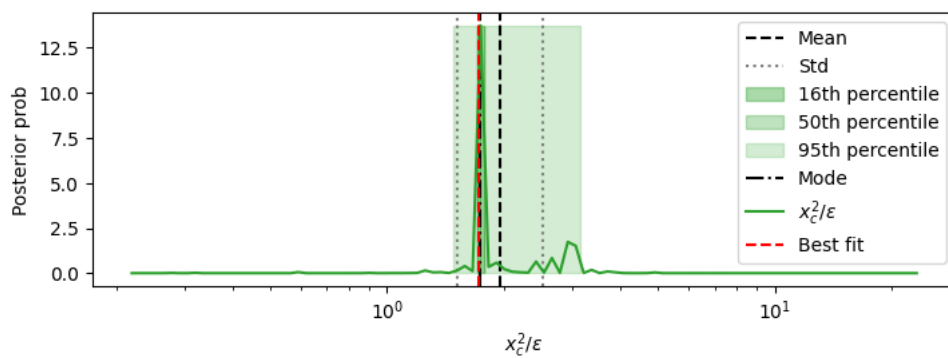
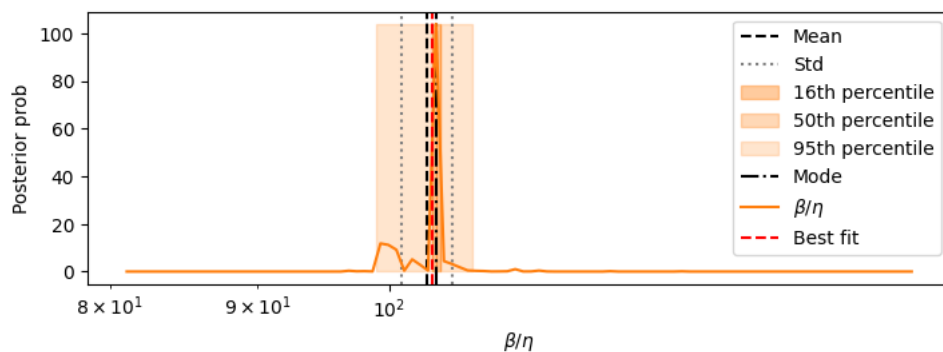
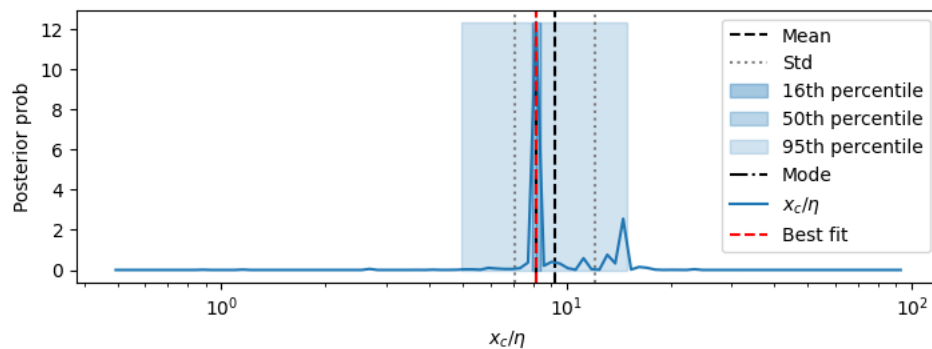
2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability



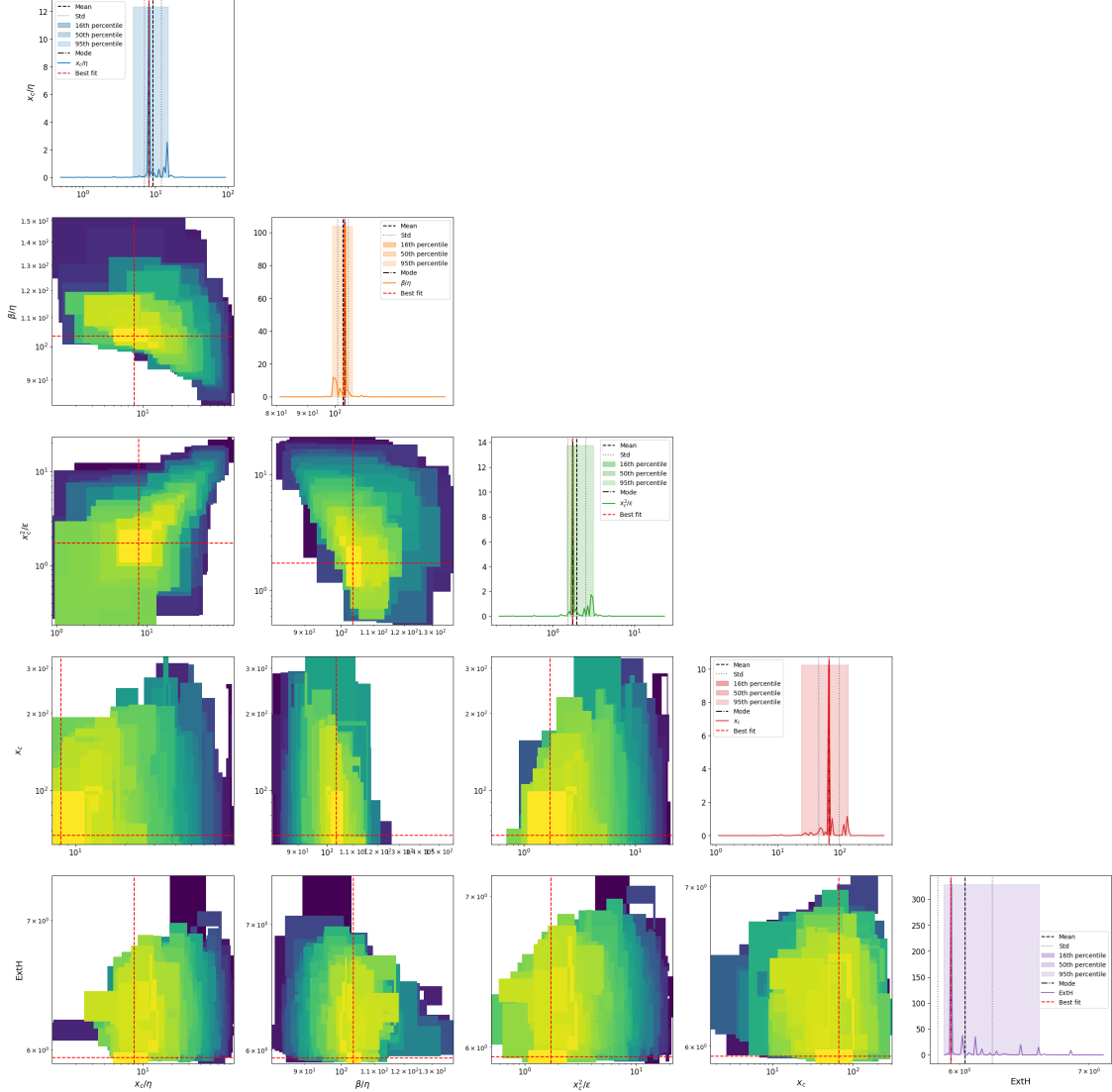
3. Posterior distributions of parameters

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



2D marginalizations of posterior distributions

2D Marginalized Posterior



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 \ |
|----------------------------|-------------|---------------------------|
| xc/eta | 9.225 | [2.842, 2.173] |
| beta/eta | 103.046 | [2.081, 2.04] |
| xc^2/epsilon | 1.96 | [0.561, 0.436] |
| xc | 67.357 | [31.352, 21.394] |
| ExtH | 6.042 | [0.199, 0.193] |
| eta | 7.478 | [3.116, 2.199] |
| beta | 763.13 | [316.92, 223.926] |
| epsilon | 2405.406 | [2317.188, 1180.236] |
| sqrt(xc/eta) | 2.951 | [0.386, 0.341] |
| s= eta^0.5*xc^1.5/epsilon | 0.623 | [0.0731, 0.0654] |
| beta*xc/epsilon | 21.909 | [0.858, 0.826] |
| eta*xc/epsilon | 0.211 | [0.00474, 0.00464] |
| Fx=beta^2/eta*xc | 1161.058 | [361.911, 275.908] |
| Dx =beta*epsilon/eta*xc^2 | 54.063 | [15.241, 11.889] |
| Pk=beta*k/epsilon | 0.16 | [0.0871, 0.0564] |
| Fk=beta^2/eta*k | 157401.215 | [67677.414, 47327.937] |
| Dk =beta*epsilon/eta*k^2 | 1000542.991 | [1084385.127, 520389.134] |
| Fk^2/Dk=beta^3/eta*epsilon | 25769.06 | [9708.92, 7051.972] |
| beta^2/epsilon | 246.456 | [93.126, 67.587] |
| k/beta | 0.000654 | [0.00028, 0.000196] |
| k/epsilon | 0.000207 | [0.000199, 0.000101] |
| best fit_MedianLifetime | 74.26 | 0.51 |
| best fit_MaxLifetime | 106.0 | 0 |
| data_MedianLifetime | 73.0 | 0.5 |
| data_MaxLifetime | 106.0 | 0 |

| | mode \ |
|----------------------------|------------|
| xc/eta | 8.151 |
| beta/eta | 103.789 |
| xc^2/epsilon | 1.744 |
| xc | 49.068 |
| ExtH | 5.941 |
| eta | 3.711 |
| beta | 850.841 |
| epsilon | 2341.033 |
| sqrt(xc/eta) | 2.855 |
| s= eta^0.5*xc^1.5/epsilon | 0.603 |
| beta*xc/epsilon | 21.97 |
| eta*xc/epsilon | 0.212 |
| Fx=beta^2/eta*xc | 1290.083 |
| Dx =beta*epsilon/eta*xc^2 | 60.025 |
| Pk=beta*k/epsilon | 0.172 |
| Fk=beta^2/eta*k | 173095.914 |
| Dk =beta*epsilon/eta*k^2 | 567261.121 |
| Fk^2/Dk=beta^3/eta*epsilon | 28505.994 |
| beta^2/epsilon | 281.127 |

| | |
|-------------------------|----------|
| k/beta | 0.000587 |
| k/epsilon | 0.000538 |
| best fit_MedianLifetime | 74.26 |
| best fit_MaxLifetime | 106.0 |
| data_MedianLifetime | 73.0 |
| data_MaxLifetime | 106.0 |

| | percentile_16 \ |
|----------------------------|--|
| xc/eta | [7.938, 8.824] |
| beta/eta | [103.46, 104.78] |
| xc^2/epsilon | [1.703, 1.871] |
| xc | [44.717, 53.842] |
| ExtH | [5.935, 5.958] |
| eta | [3.214, 4.045] |
| beta | [826.853, 927.063] |
| epsilon | [1753.337, 2480.367] |
| sqrt(xc/eta) | [2.817, 2.893] |
| s= eta^0.5*xc^1.5/epsilon | [0.595, 0.624] |
| beta*xc/epsilon | [21.774, 22.167] |
| eta*xc/epsilon | [0.211, 0.214] |
| Fx=beta^2/eta*xc | [1171.539, 1332.205] |
| Dx =beta*epsilon/eta*xc^2 | [55.677, 61.548] |
| Pk=beta*k/epsilon | [0.166, 0.194] |
| Fk=beta^2/eta*k | [158619.616, 178209.201] |
| Dk =beta*epsilon/eta*k^2 | [428287.349, 671446.916] |
| Fk^2/Dk=beta^3/eta*epsilon | [25326.796, 29652.057] |
| beta^2/epsilon | [251.935, 291.591] |
| k/beta | [0.000539, 0.000604] |
| k/epsilon | [0.000453, 0.00064] |
| best fit_MedianLifetime | [73.77000000000001, 74.77000000000001] |
| best fit_MaxLifetime | [106.0, 106.0] |
| data_MedianLifetime | [72.51, 73.5] |
| data_MaxLifetime | [106.0, 106.0] |

| | percentile_50 \ |
|---------------------------|---------------------|
| xc/eta | [7.141, 9.808] |
| beta/eta | [101.513, 104.78] |
| xc^2/epsilon | [1.55, 2.056] |
| xc | [44.717, 73.375] |
| ExtH | [5.924, 6.039] |
| eta | [2.865, 6.786] |
| beta | [696.477, 981.634] |
| epsilon | [780.454, 2784.408] |
| sqrt(xc/eta) | [2.672, 3.05] |
| s= eta^0.5*xc^1.5/epsilon | [0.582, 0.639] |
| beta*xc/epsilon | [21.388, 22.567] |
| eta*xc/epsilon | [0.208, 0.214] |

| | |
|----------------------------|--|
| Fx=beta^2/eta*xc | [966.129, 1514.906] |
| Dx =beta*epsilon/eta*xc^2 | [50.366, 71.536] |
| Pk=beta*k/epsilon | [0.141, 0.246] |
| Fk=beta^2/eta*k | [105523.842, 212221.786] |
| Dk =beta*epsilon/eta*k^2 | [305687.667, 1052660.001] |
| Fk^2/Dk=beta^3/eta*epsilon | [21632.449, 34715.977] |
| beta^2/epsilon | [188.07, 337.488] |
| k/beta | [0.000481, 0.00076] |
| k/epsilon | [0.000254, 0.000906] |
| best fit_MedianLifetime | [73.77000000000001, 74.77000000000001] |
| best fit_MaxLifetime | [106.0, 106.0] |
| data_MedianLifetime | [72.51, 73.5] |
| data_MaxLifetime | [106.0, 106.0] |

| | percentile_95 \ |
|----------------------------|--|
| xc/eta | [5.78, 16.645] |
| beta/eta | [98.348, 106.79] |
| xc^2/epsilon | [1.346, 3.451] |
| xc | [19.997, 128.091] |
| ExtH | [5.89, 6.448] |
| eta | [2.029, 17.023] |
| beta | [186.885, 1551.221] |
| epsilon | [218.757, 9933.863] |
| sqrt(xc/eta) | [2.404, 4.08] |
| s= eta^0.5*xc^1.5/epsilon | [0.529, 0.849] |
| beta*xc/epsilon | [20.271, 23.389] |
| eta*xc/epsilon | [0.205, 0.222] |
| Fx=beta^2/eta*xc | [541.839, 2088.92] |
| Dx =beta*epsilon/eta*xc^2 | [27.6, 83.144] |
| Pk=beta*k/epsilon | [0.0695, 0.542] |
| Fk=beta^2/eta*k | [41568.539, 319004.101] |
| Dk =beta*epsilon/eta*k^2 | [99331.461, 4538752.936] |
| Fk^2/Dk=beta^3/eta*epsilon | [11513.501, 43978.585] |
| beta^2/epsilon | [121.301, 452.094] |
| k/beta | [0.000304, 0.00268] |
| k/epsilon | [5.03e-05, 0.00203] |
| best fit_MedianLifetime | [73.77000000000001, 74.77000000000001] |
| best fit_MaxLifetime | [106.0, 106.0] |
| data_MedianLifetime | [72.51, 73.5] |
| data_MaxLifetime | [106.0, 106.0] |

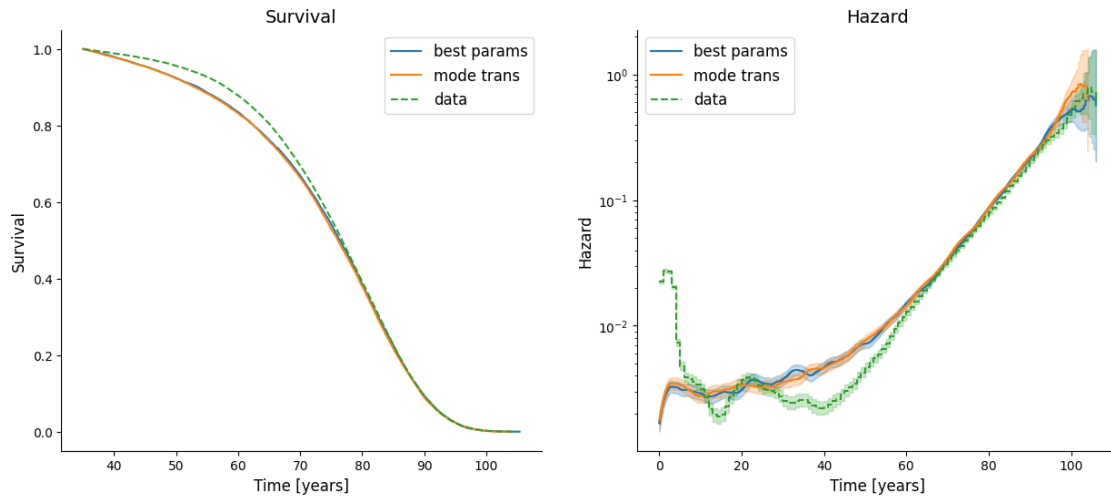
| | max_likelihood | mode_overall |
|--------------|----------------|--------------|
| xc/eta | 8.161 | 8.161 |
| beta/eta | 103.514 | 103.514 |
| xc^2/epsilon | 1.727 | 1.727 |
| xc | 67.012 | 67.012 |
| ExtH | 5.941 | 5.941 |

| | | |
|--|-------------|-------------|
| eta | 8.211 | 8.211 |
| beta | 849.968 | 849.968 |
| epsilon | 2600.175 | 2600.175 |
| sqrt(xc/eta) | 2.857 | 2.857 |
| s= eta ^{0.5} *xc ^{1.5} /epsilon | 0.605 | 0.605 |
| beta*xc/epsilon | 21.905 | 21.905 |
| eta*xc/epsilon | 0.212 | 0.212 |
| Fx=beta ² /eta*k | 1312.962 | 1312.962 |
| Dx =beta*epsilon/eta*k ² | 59.938 | 59.938 |
| Pk=beta*k/epsilon | 0.163 | 0.163 |
| Fk=beta ² /eta*k | 175967.444 | 175967.444 |
| Dk =beta*epsilon/eta*k ² | 1076619.946 | 1076619.946 |
| Fk ² /Dk=beta ³ /eta*epsilon | 28760.884 | 28760.884 |
| beta ² /epsilon | 277.845 | 277.845 |
| k/beta | 0.000588 | 0.000588 |
| k/epsilon | 0.000192 | 0.000192 |
| best fit_MedianLifetime | 74.26 | NaN |
| best fit_MaxLifetime | 106.0 | NaN |
| data_MedianLifetime | 73.0 | NaN |
| data_MaxLifetime | 106.0 | 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')

