Sweden_M_1910_hetro_post.csv_run_13_20250529_145418

May 29, 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_M_1910_hetro_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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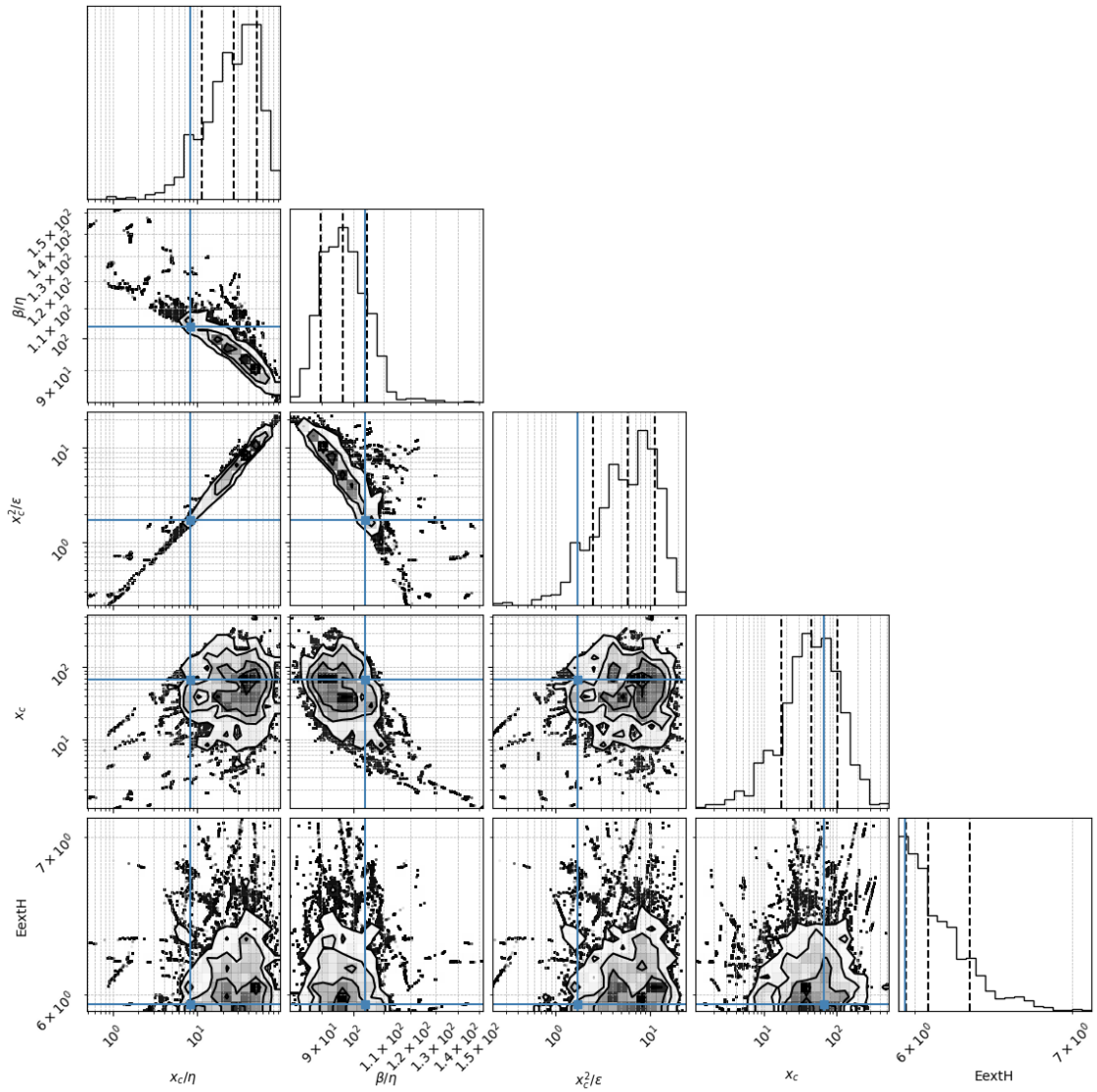
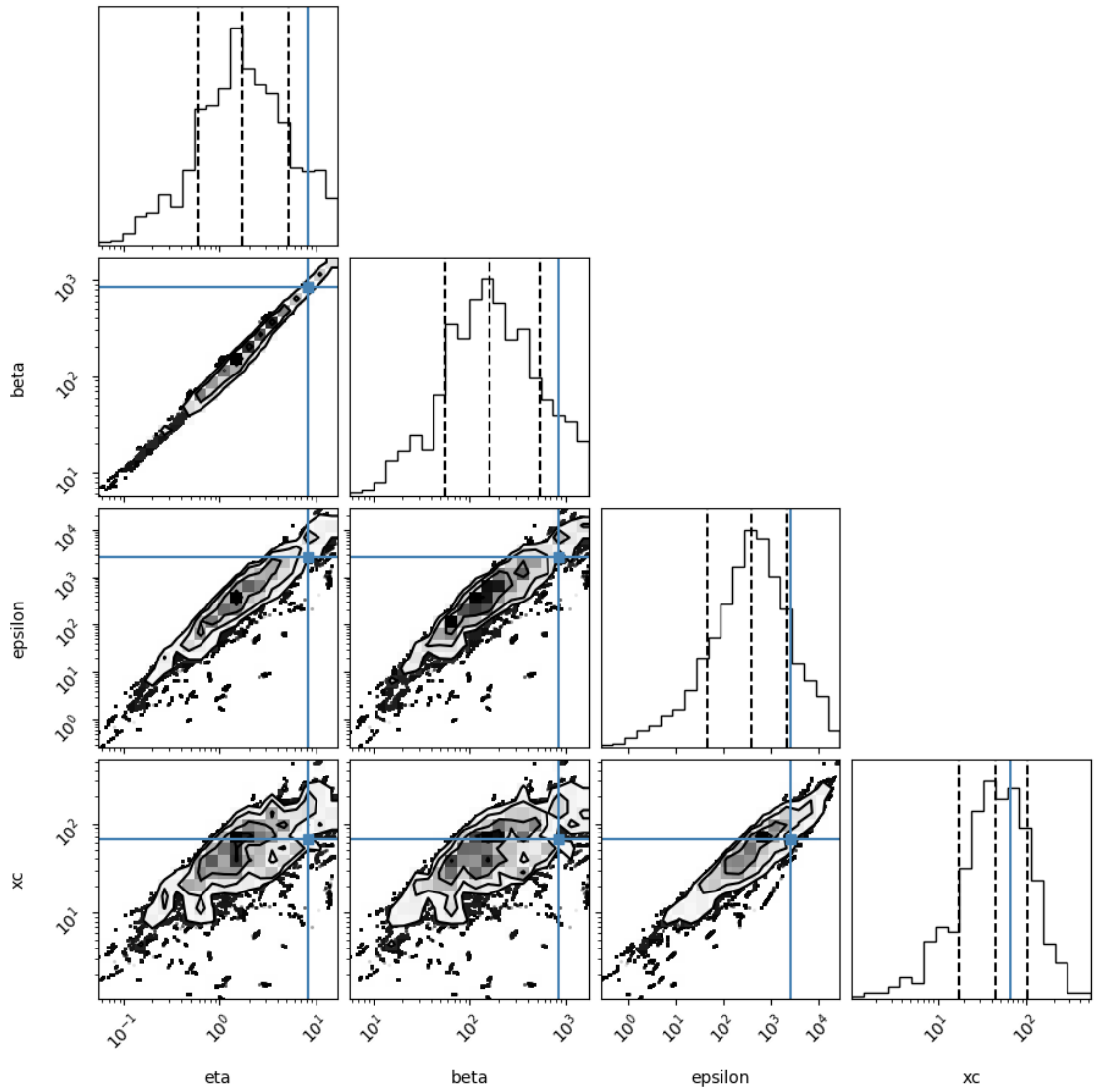
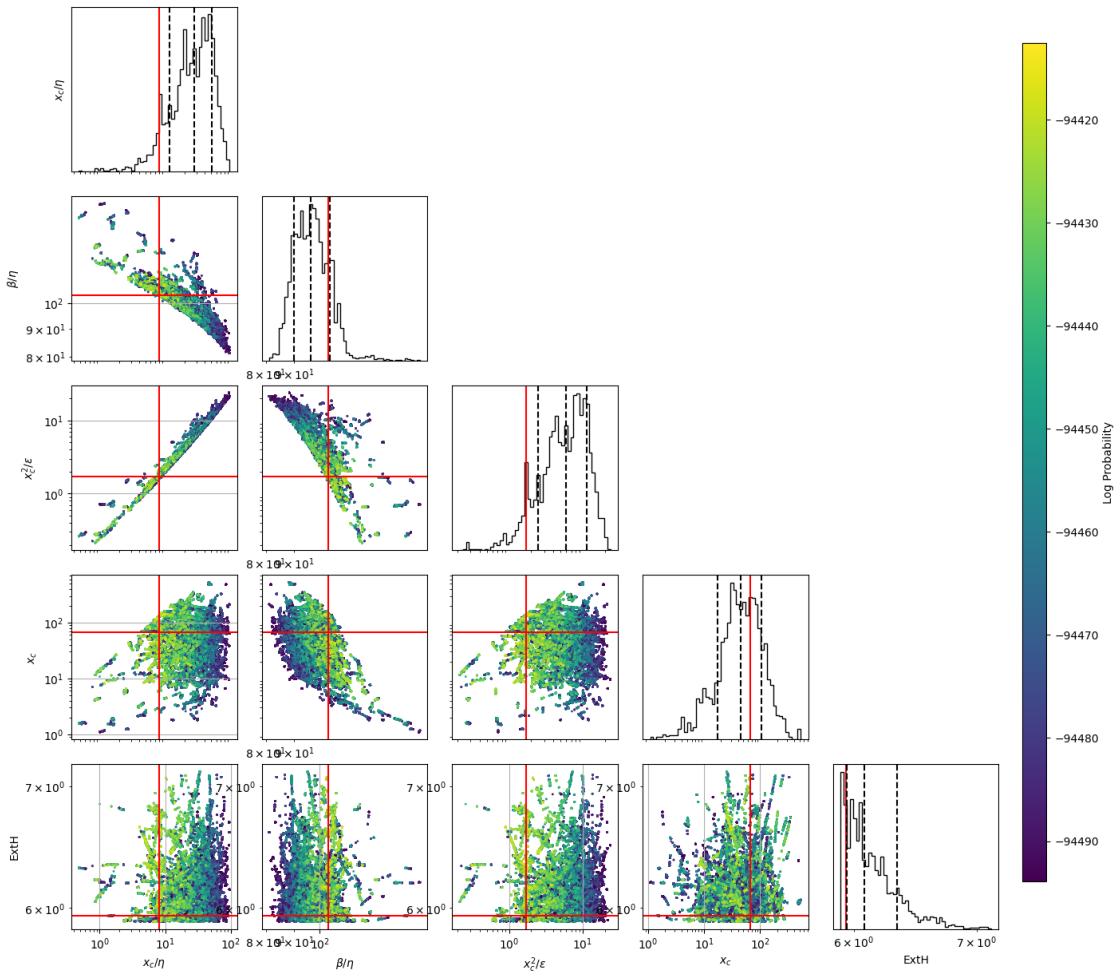

x_c/η
β/η
x_c^2/ε
x_c
EextH



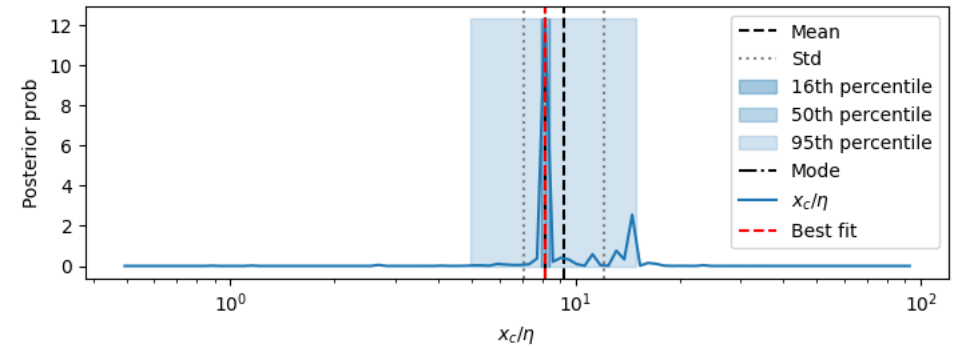
2 2. Heat map corner plot of raw samples

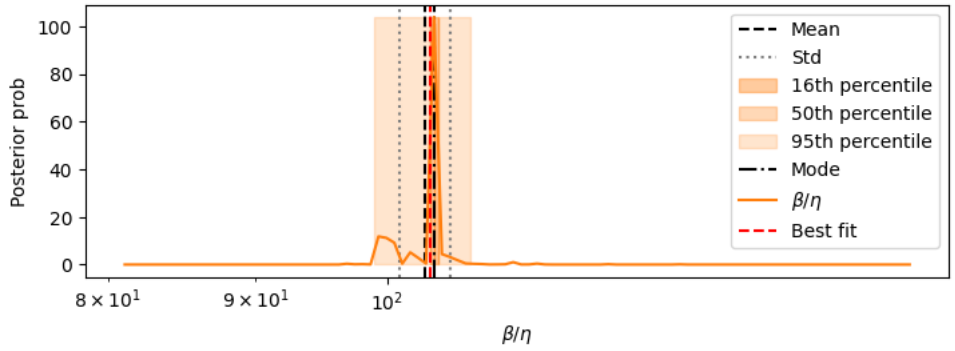
This plot shows all the raw sample points and their lnprobability

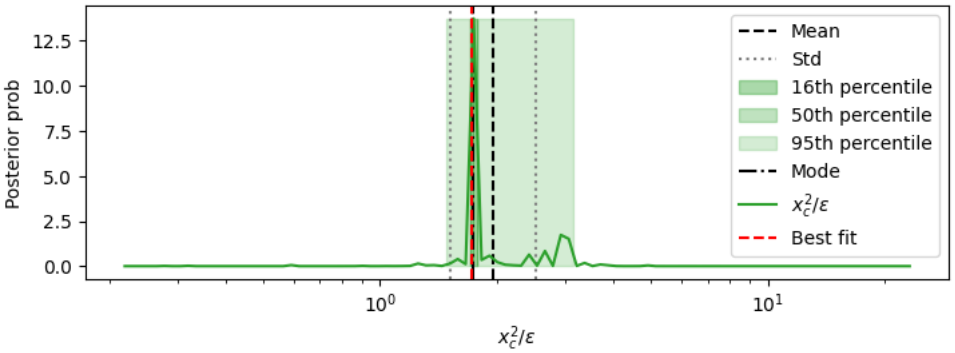


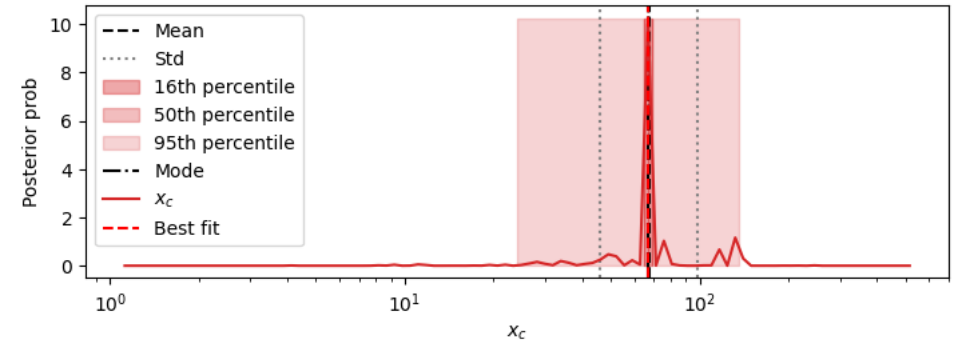
3 3. Posterior distributions of parameters

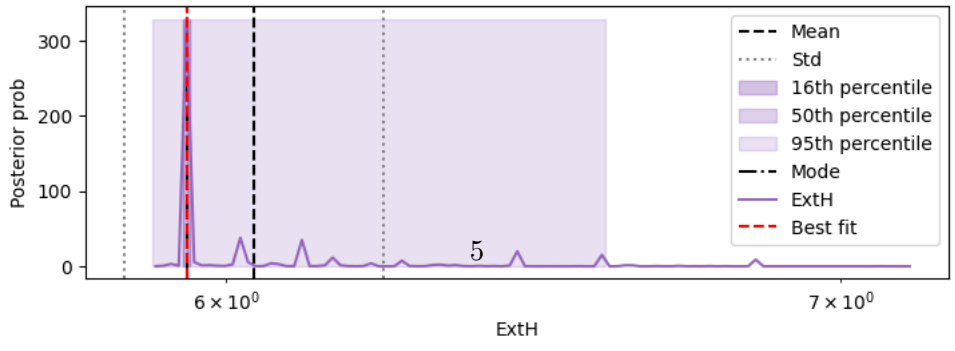
1d marginalizations of posterior distributions. we use a grid of size nbins=100-150


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

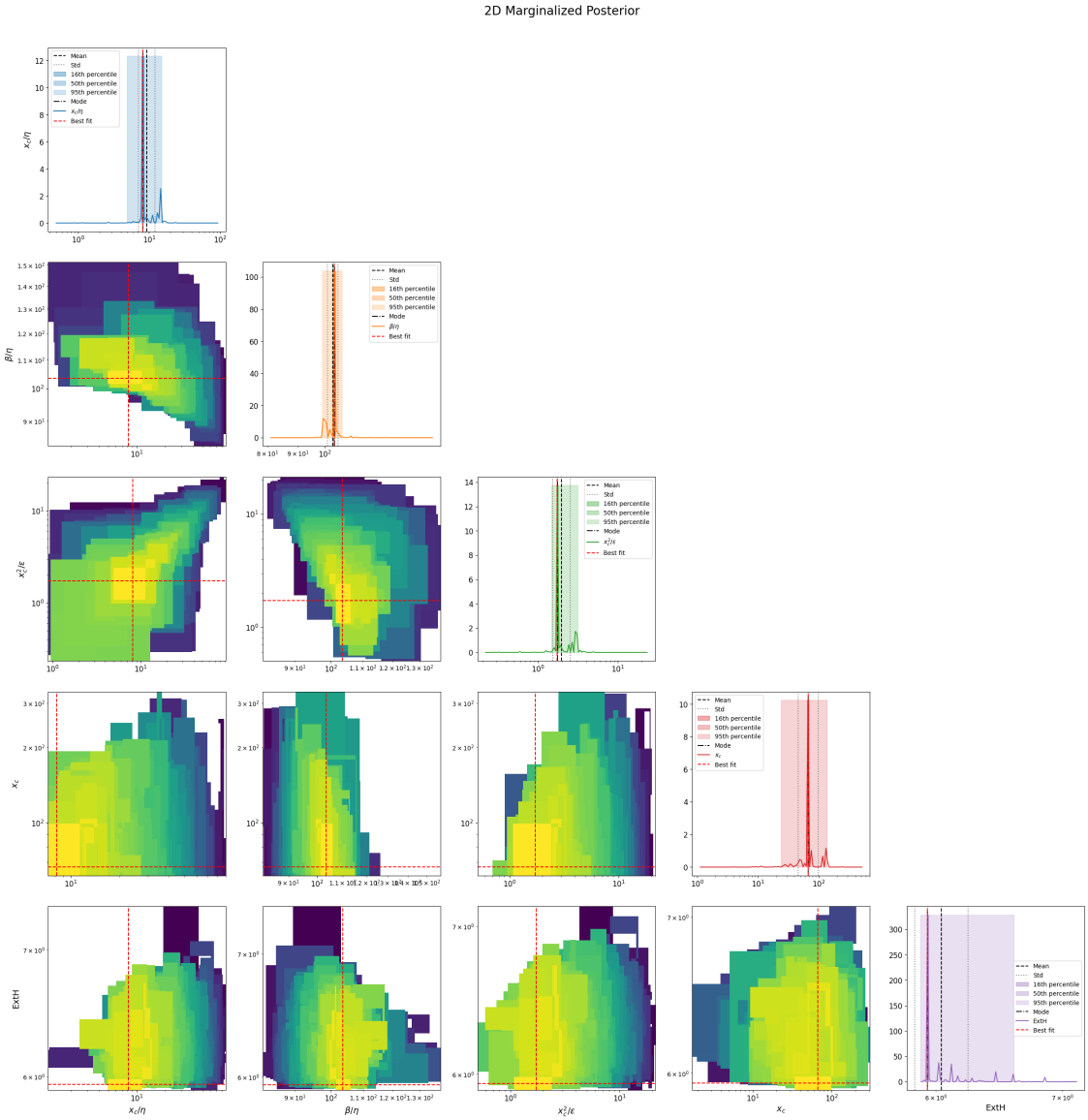

Posterior prob
β/η
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
β/η
Best fit


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	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]	
epsilon/beta^2	0.00406	[0.00153, 0.00111]	
k/beta	0.000654	[0.000281, 0.000196]	
k^2/epsilon	0.000104	[9.96e-05, 5.08e-05]	
best fit_MedianLifetime	73.98	0.51	
best fit_MaxLifetime	104.23	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	
epsilon/beta^2	0.00356	

k/beta	0.000587
k^2/epsilon	0.000269
best fit_MedianLifetime	73.98
best fit_MaxLifetime	104.23
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]
epsilon/beta^2	[0.00343, 0.00397]
k/beta	[0.000539, 0.000604]
k^2/epsilon	[0.000226, 0.00032]
best fit_MedianLifetime	[73.49000000000001, 74.49000000000001]
best fit_MaxLifetime	[104.23, 104.23]
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]
epsilon/beta^2	[0.00296, 0.00532]
k/beta	[0.000481, 0.00076]
k^2/epsilon	[0.000127, 0.000453]
best fit_MedianLifetime	[73.49000000000001, 74.49000000000001]
best fit_MaxLifetime	[104.23, 104.23]
data_MedianLifetime	[72.51, 73.5]
data_MaxLifetime	[106.0, 106.0]

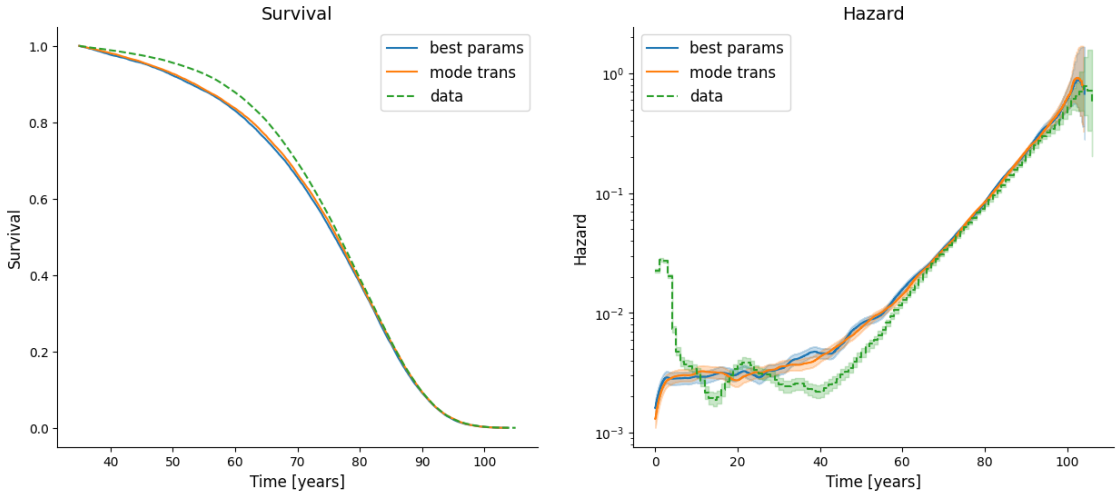
	percentile_95 \
xc/eta	[5.78, 16.645]
beta/eta	[98.348, 106.79]
xc^2/epsilon	[1.346, 3.451]
xc	[19.997, 128.091]
ExtH	[5.89, 6.448]
eta	[2.029, 17.023]
beta	[186.885, 1551.221]
epsilon	[218.757, 9933.863]
sqrt(xc/eta)	[2.404, 4.08]
s= eta^0.5*xc^1.5/epsilon	[0.529, 0.849]
beta*xc/epsilon	[20.271, 23.389]
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]
epsilon/beta^2	[0.00221, 0.00824]
k/beta	[0.000304, 0.00268]
k^2/epsilon	[2.51e-05, 0.00102]
best fit_MedianLifetime	[73.49000000000001, 74.49000000000001]
best fit_MaxLifetime	[104.23, 104.23]
data_MedianLifetime	[72.51, 73.5]
data_MaxLifetime	[106.0, 106.0]

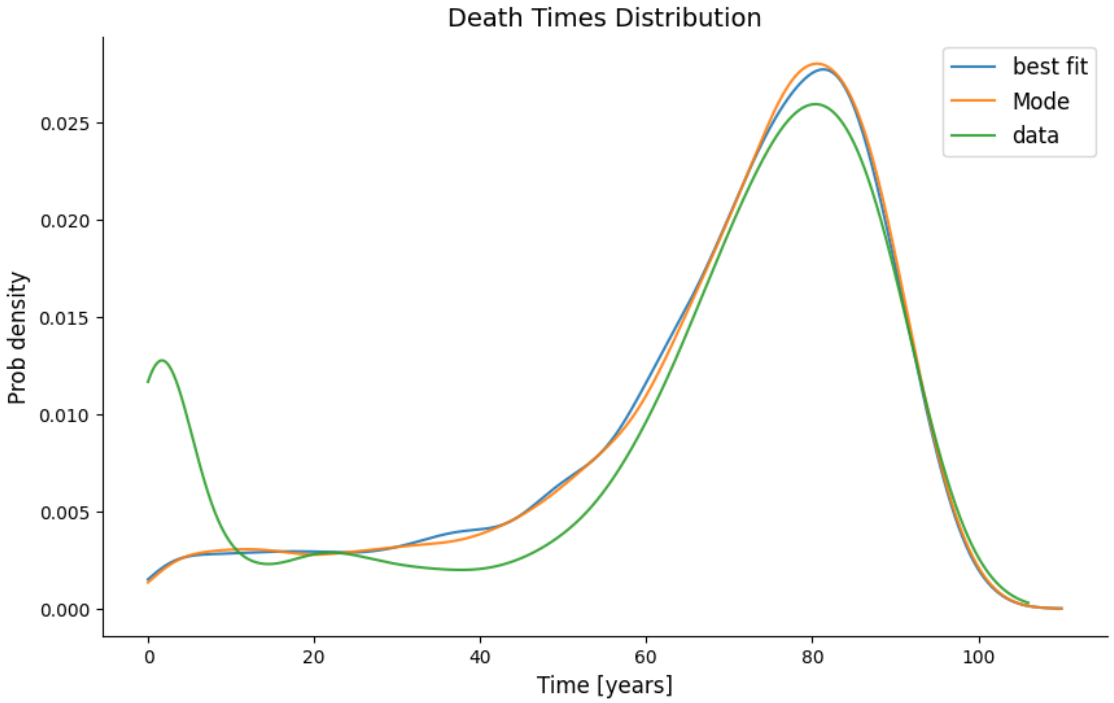
	max_likelihood	mode_overall
xc/eta	8.161	8.161
beta/eta	103.514	103.514
xc^2/epsilon	1.727	1.727
xc	67.012	67.012
ExtH	5.941	5.941

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*xc	1312.962	1312.962
Dx =beta*epsilon/eta*xc^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
epsilon/beta^2	0.0036	0.0036
k/beta	0.000588	0.000588
k^2/epsilon	0.000096	0.000096
best fit_MedianLifetime	73.98	NaN
best fit_MaxLifetime	104.23	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




Death Times Distribution
best fit
Mode
data
Prob density
0.025
0.020
0.015
0.010
0.005
0.000
0
20
40
60
80
100
Time [years]