

Denmark_M_1900_homo_post.csv_run_17_20250525_214128

May 25, 2025

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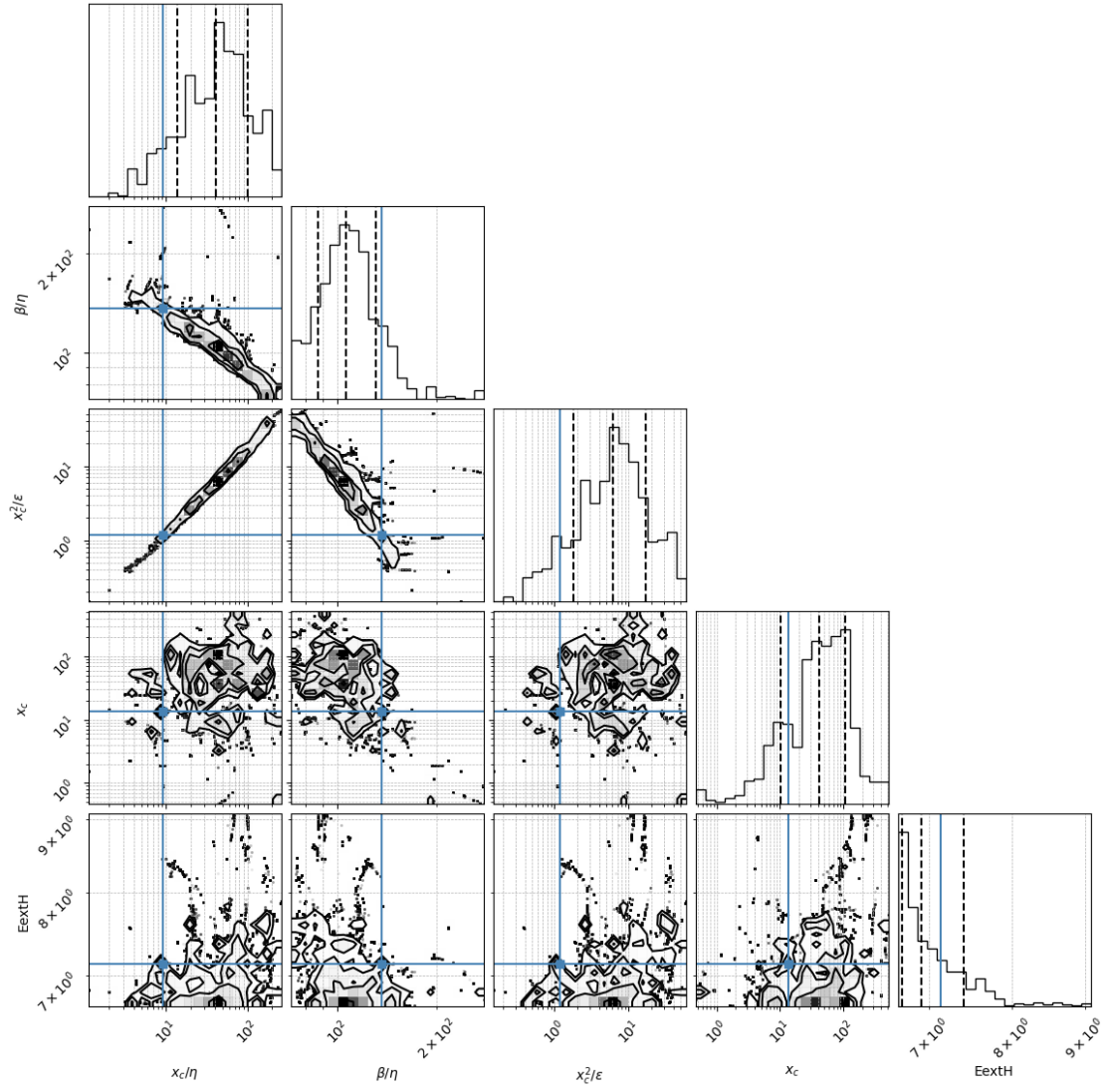
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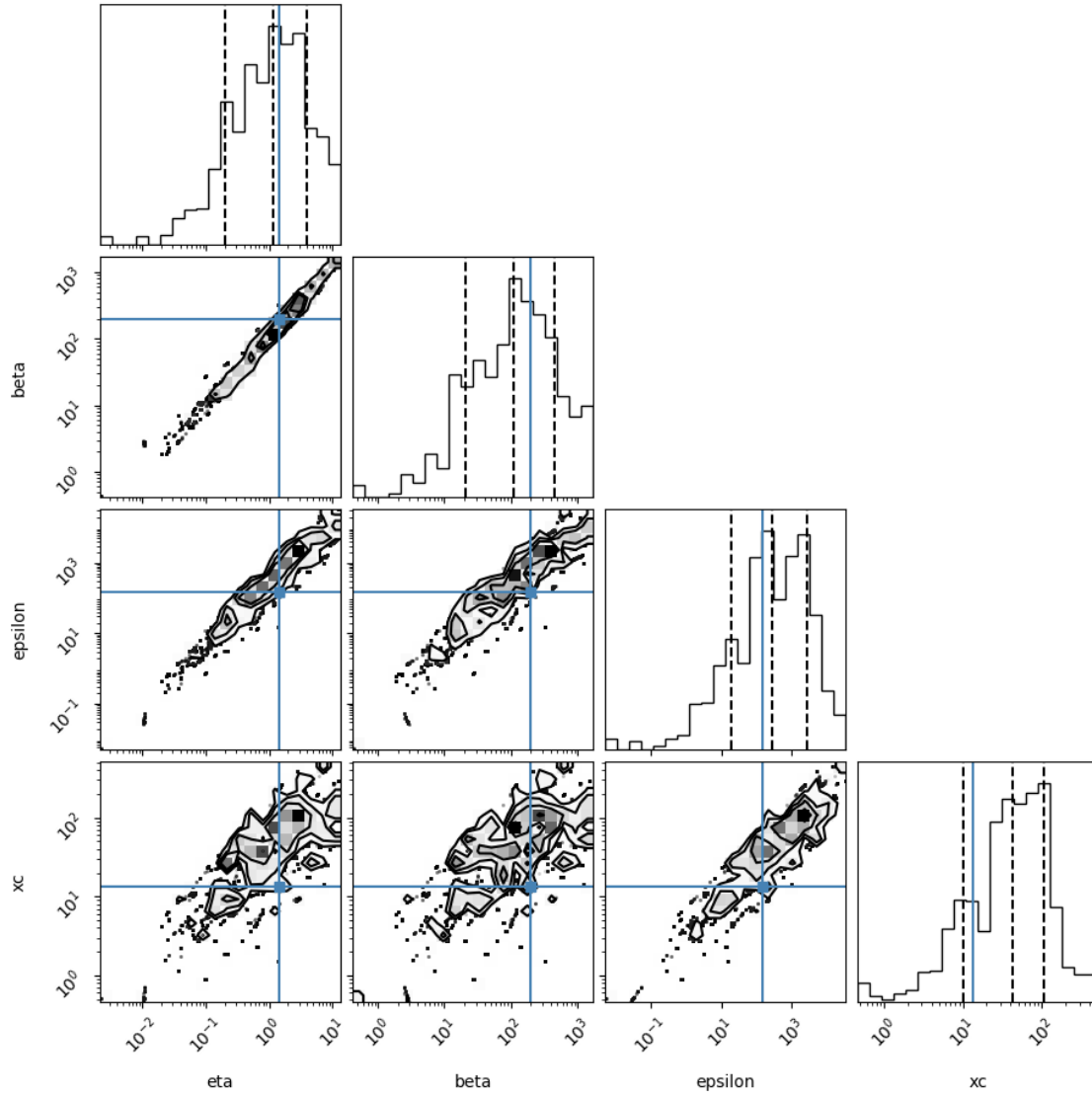
Reading Humans_M

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

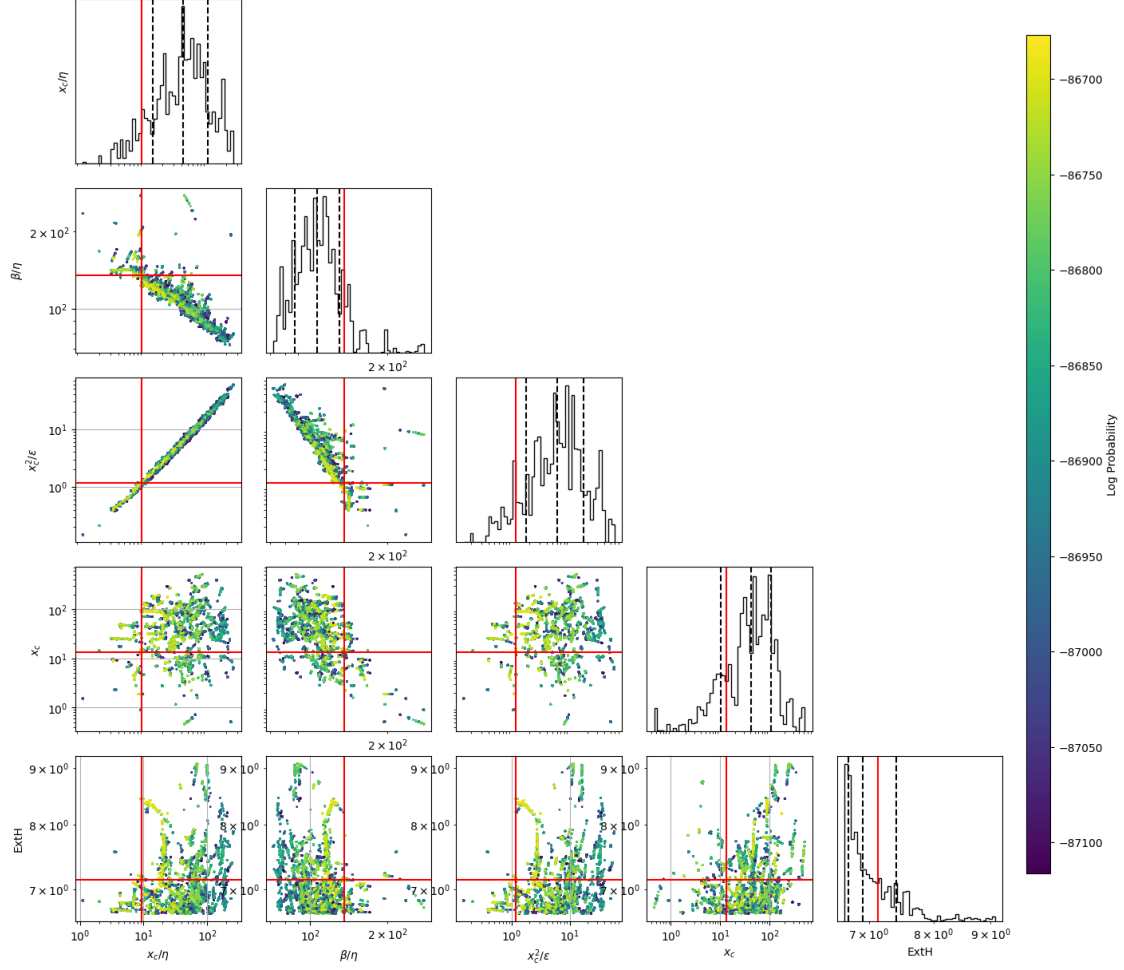
(25,)





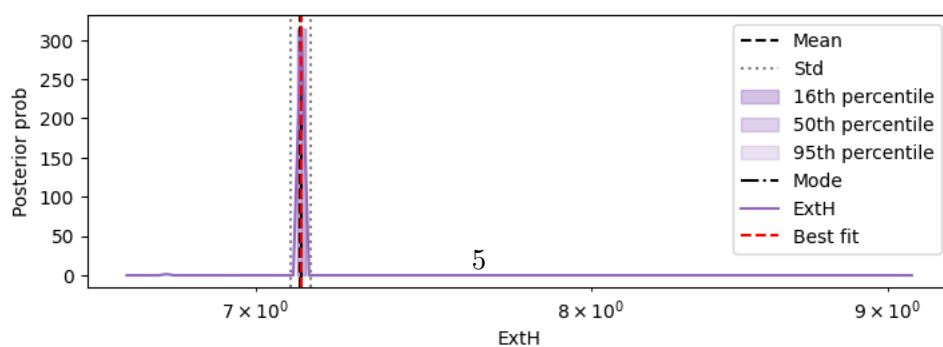
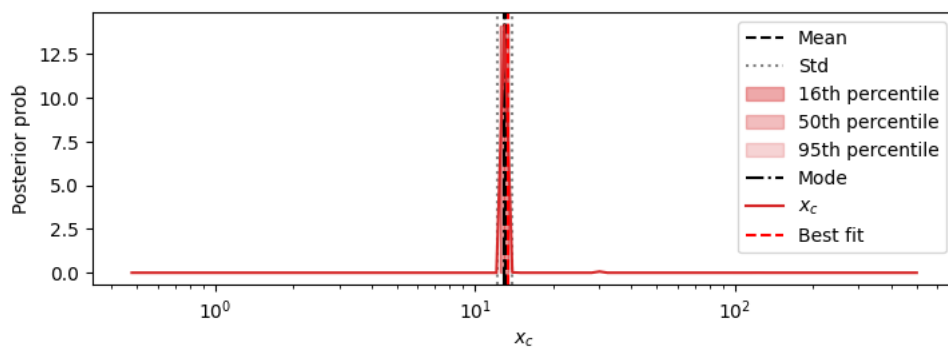
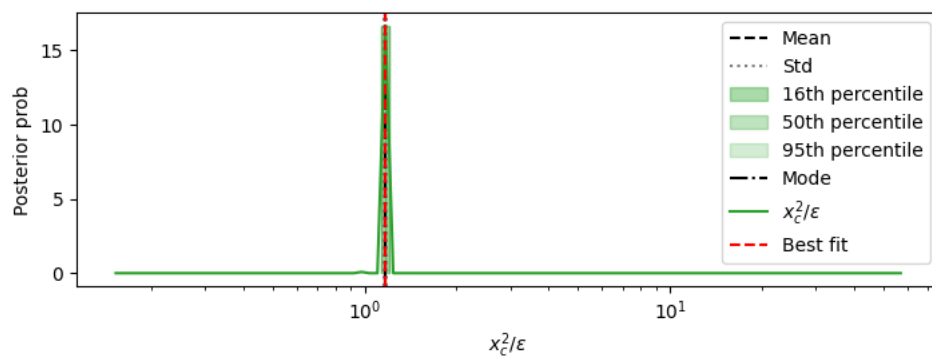
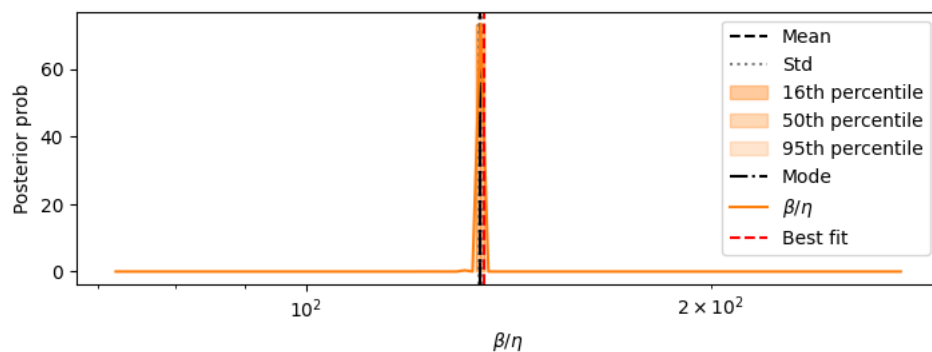
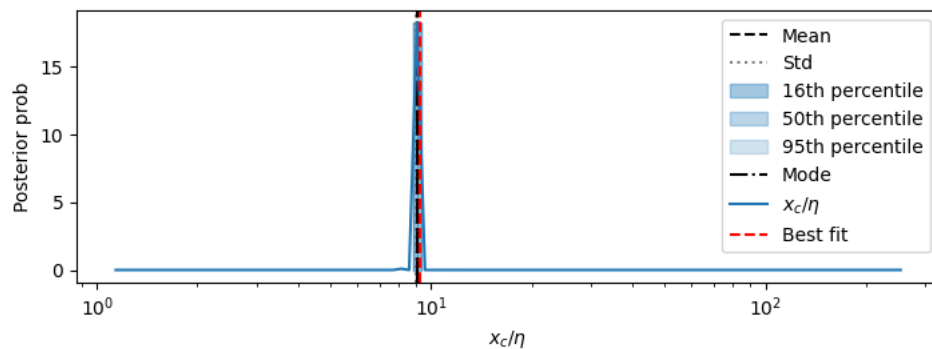
2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability



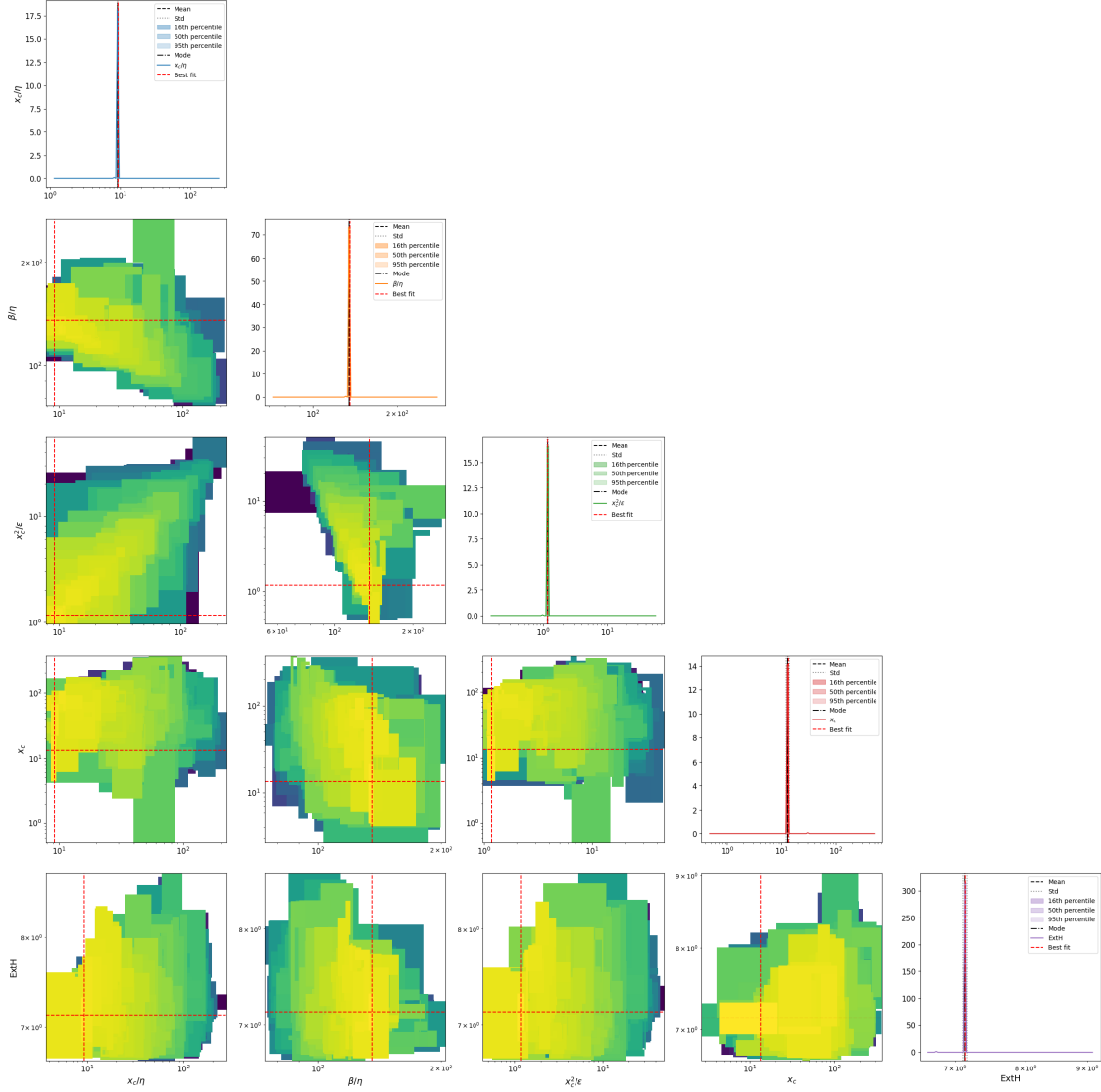
3. Posterior distributions of parameters

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	mode \
xc/eta	9.077	[0.0719, 0.0713]	10.13
beta/eta	134.792	[0.283, 0.282]	122.6
xc^2/epsilon	1.168	[0.0148, 0.0147]	1.399
xc	13.031	[0.84, 0.789]	30.148
ExtH	7.127	[0.0271, 0.027]	7.129
eta	1.48	[0.25, 0.214]	2.439
beta	194.873	[34.191, 29.087]	206.263
epsilon	157.583	[56.275, 41.467]	175.449
sqrt(xc/eta)	3.013	[0.00683, 0.00682]	3.183
s= eta^0.5*xc^1.5/epsilon	0.385	[0.00631, 0.00621]	0.405
beta*xc/epsilon	17.23	[0.038, 0.0379]	16.992
eta*xc/epsilon	0.127	[0.00107, 0.00106]	0.126
Fx=beta^2/eta*xc	2068.33	[15.521, 15.405]	1205.825
Dx =beta*epsilon/eta*xc^2	112.953	[0.756, 0.751]	85.13
Pk=beta*k/epsilon	0.643	[0.0329, 0.0313]	0.281
Fk=beta^2/eta*k	54352.652	[2644.576, 2521.872]	54185.143
Dk =beta*epsilon/eta*k^2	83744.962	[9516.463, 8545.396]	86715.224
Fk^2/Dk=beta^3/eta*epsilon	35389.256	[92.688, 92.446]	10937.148
beta^2/epsilon	249.786	[4.657, 4.572]	97.104
k/beta	0.00259	[0.000346, 0.000305]	0.00242
k/epsilon	0.00323	[0.000862, 0.000681]	0.00285
best fit_MedianLifetime	67.75	0.51	67.75
best fit_MaxLifetime	110.0	0	110.0
data_MedianLifetime	70.0	0.51	70.0
data_MaxLifetime	104.0	0	104.0

	percentile_16	percentile_50 \
xc/eta	[9.857, 10.41]	[9.857, 10.994]
beta/eta	[121.771, 123.434]	[121.771, 125.12]
xc^2/epsilon	[1.357, 1.441]	[1.357, 1.441]
xc	[29.107, 31.226]	[27.132, 31.226]
ExtH	[7.118, 7.14]	[7.118, 7.163]
eta	[2.335, 2.781]	[2.139, 4.701]
beta	[197.846, 215.038]	[197.846, 215.038]
epsilon	[162.189, 189.792]	[162.189, 189.792]
sqrt(xc/eta)	[3.14, 3.226]	[3.14, 3.316]
s= eta^0.5*xc^1.5/epsilon	[0.399, 0.412]	[0.386, 0.412]
beta*xc/epsilon	[16.873, 17.111]	[16.873, 17.353]
eta*xc/epsilon	[0.126, 0.127]	[0.126, 0.128]
Fx=beta^2/eta*xc	[1160.232, 1253.209]	[1160.232, 1353.637]
Dx =beta*epsilon/eta*xc^2	[82.175, 88.192]	[82.175, 94.65]
Pk=beta*k/epsilon	[0.269, 0.292]	[0.269, 0.292]
Fk=beta^2/eta*k	[52052.589, 56405.066]	[52052.589, 61121.483]
Dk =beta*epsilon/eta*k^2	[80343.929, 93591.766]	[80343.929, 93591.766]
Fk^2/Dk=beta^3/eta*epsilon	[10487.954, 11405.581]	[10487.954, 12403.493]
beta^2/epsilon	[93.643, 100.692]	[93.643, 108.272]

k/beta	[0.00232, 0.00253]	[0.00232, 0.00253]
k/epsilon	[0.00263, 0.00308]	[0.00263, 0.00308]
best fit_MedianLifetime	[67.26, 68.26]	[67.26, 68.26]
best fit_MaxLifetime	[110.0, 110.0]	[110.0, 110.0]
data_MedianLifetime	[69.5, 70.51]	[69.5, 70.51]
data_MaxLifetime	[104.0, 104.0]	[104.0, 104.0]

	percentile_95	max_likelihood \
xc/eta	[9.333, 11.611]	9.234
beta/eta	[116.915, 126.828]	135.622
xc^2/epsilon	[1.279, 1.53]	1.17
xc	[11.676, 103.114]	13.399
ExtH	[6.768, 7.346]	7.131
eta	[1.96, 13.433]	1.451
beta	[182.029, 233.724]	196.794
epsilon	[101.215, 5148.695]	153.402
sqrt(xc/eta)	[3.055, 3.408]	3.039
s= eta^0.5*xc^1.5/epsilon	[0.374, 0.426]	0.385
beta*xc/epsilon	[15.51, 17.353]	17.189
eta*xc/epsilon	[0.125, 0.129]	0.127
Fx=beta^2/eta*xc	[730.589, 1462.112]	1991.874
Dx =beta*epsilon/eta*xc^2	[71.344, 117.001]	115.879
Pk=beta*k/epsilon	[0.0772, 0.408]	0.641
Fk=beta^2/eta*k	[37751.936, 259392.769]	53378.965
Dk =beta*epsilon/eta*k^2	[80343.929, 109024.026]	83218.566
Fk^2/Dk=beta^3/eta*epsilon	[8154.756, 18865.879]	34238.921
beta^2/epsilon	[70.047, 167.356]	252.459
k/beta	[0.000519, 0.00298]	0.00254
k/epsilon	[8.29e-05, 0.00494]	0.00326
best fit_MedianLifetime	[67.26, 68.26]	67.75
best fit_MaxLifetime	[110.0, 110.0]	110.0
data_MedianLifetime	[69.5, 70.51]	70.0
data_MaxLifetime	[104.0, 104.0]	104.0

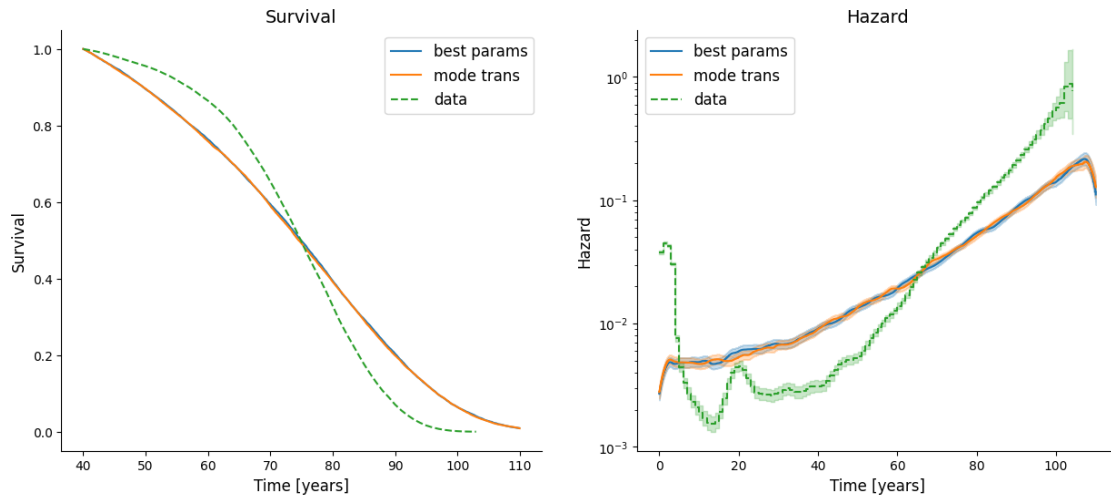
	mode_overall
xc/eta	9.234
beta/eta	135.622
xc^2/epsilon	1.17
xc	13.399
ExtH	7.131
eta	1.451
beta	196.794
epsilon	153.402
sqrt(xc/eta)	3.039
s= eta^0.5*xc^1.5/epsilon	0.385
beta*xc/epsilon	17.189
eta*xc/epsilon	0.127

$Fx = \beta^2 / \eta * xc$	1991.874
$Dx = \beta * \epsilon / \eta * xc^2$	115.879
$Pk = \beta * k / \epsilon$	0.641
$Fk = \beta^2 / \eta * k$	53378.965
$Dk = \beta * \epsilon / \eta * k^2$	83218.566
$Fk^2 / Dk = \beta^3 / \eta * \epsilon$	34238.921
β^2 / ϵ	252.459
k / β	0.00254
k / ϵ	0.00326
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')

