drosophila_707_post.csv_run_8_20250525_205913

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/DROSOPHILA/drosophila_707_post.csv
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Reading drosofila_707_seed
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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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(16,)
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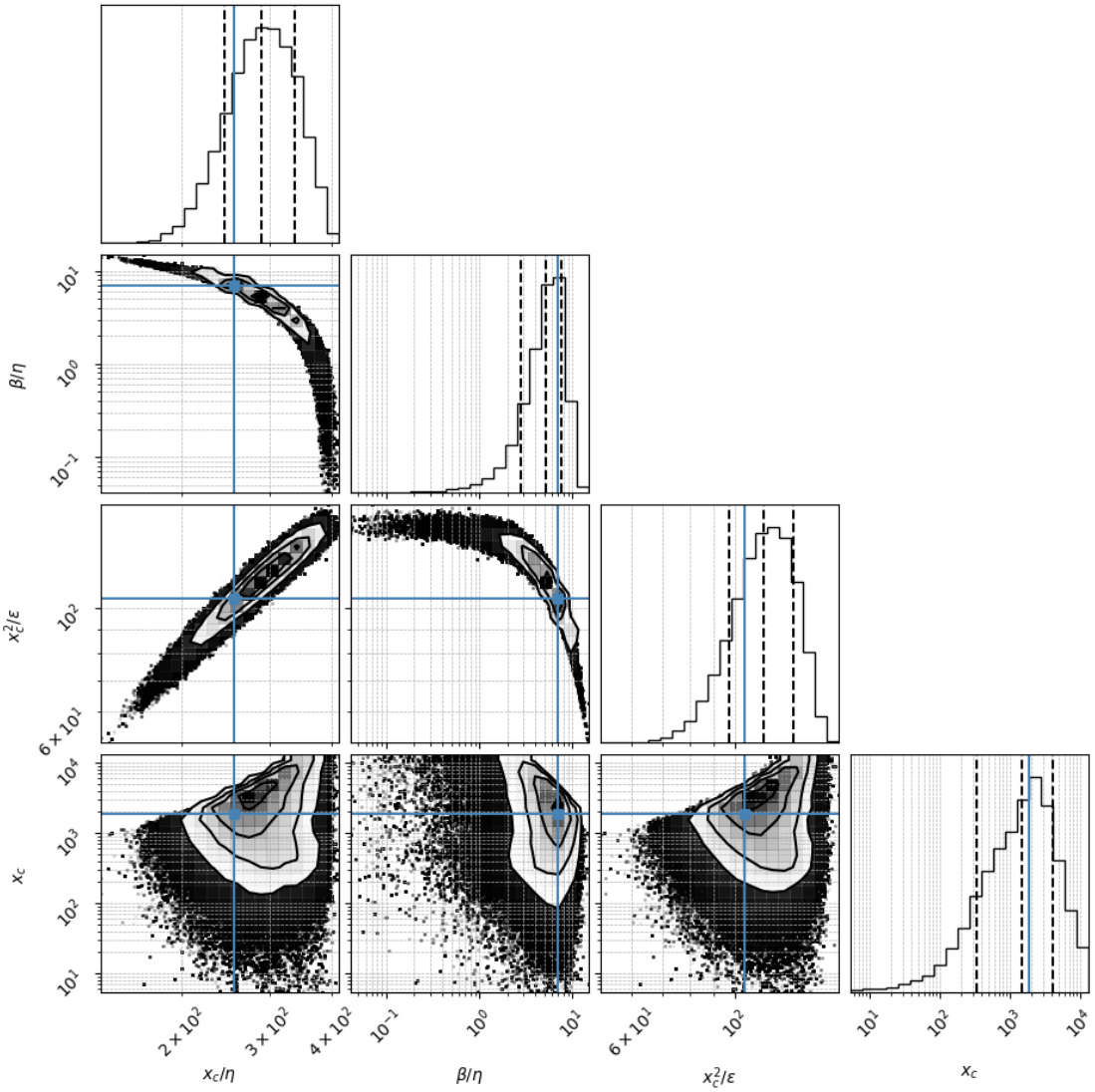
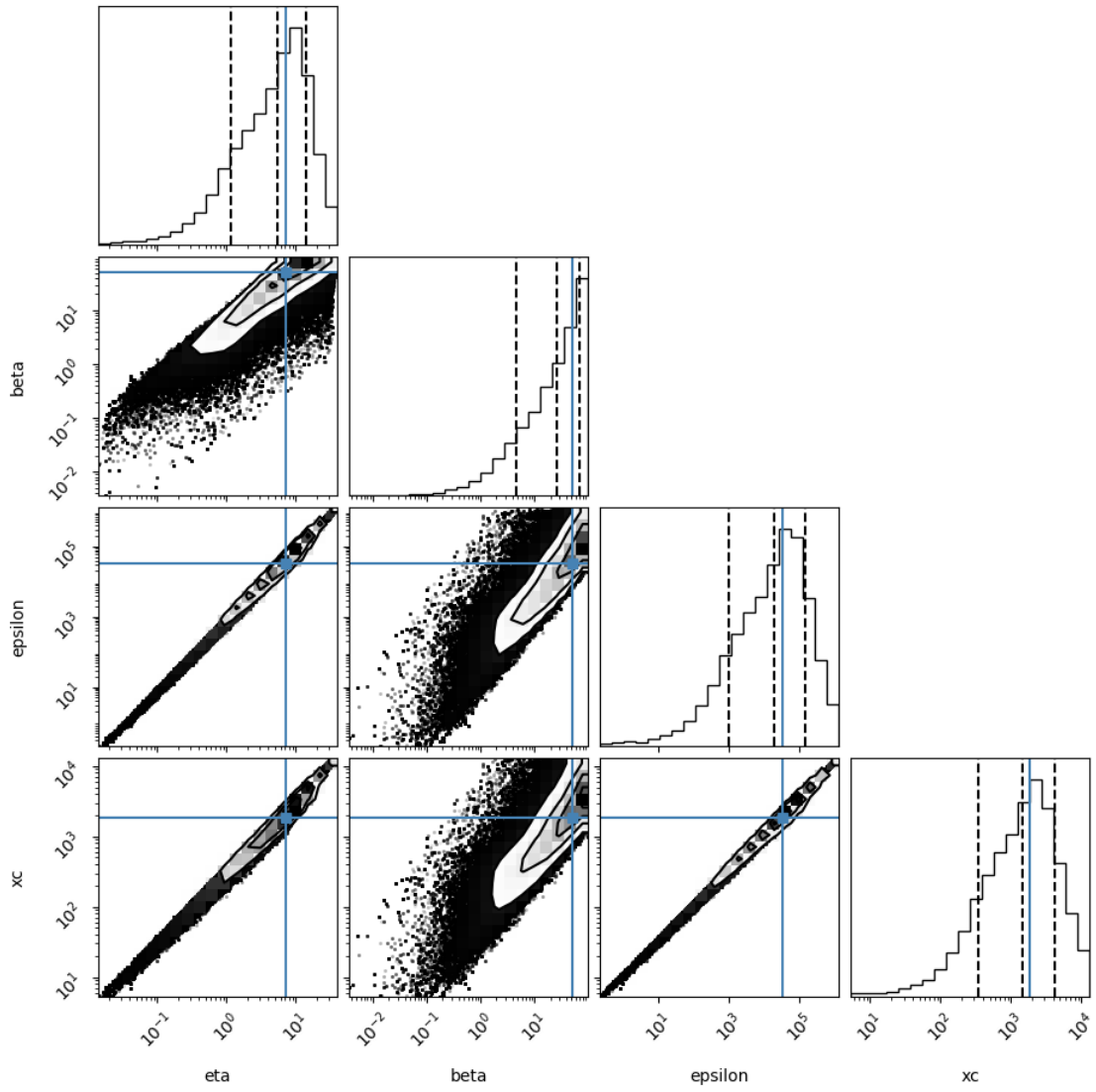
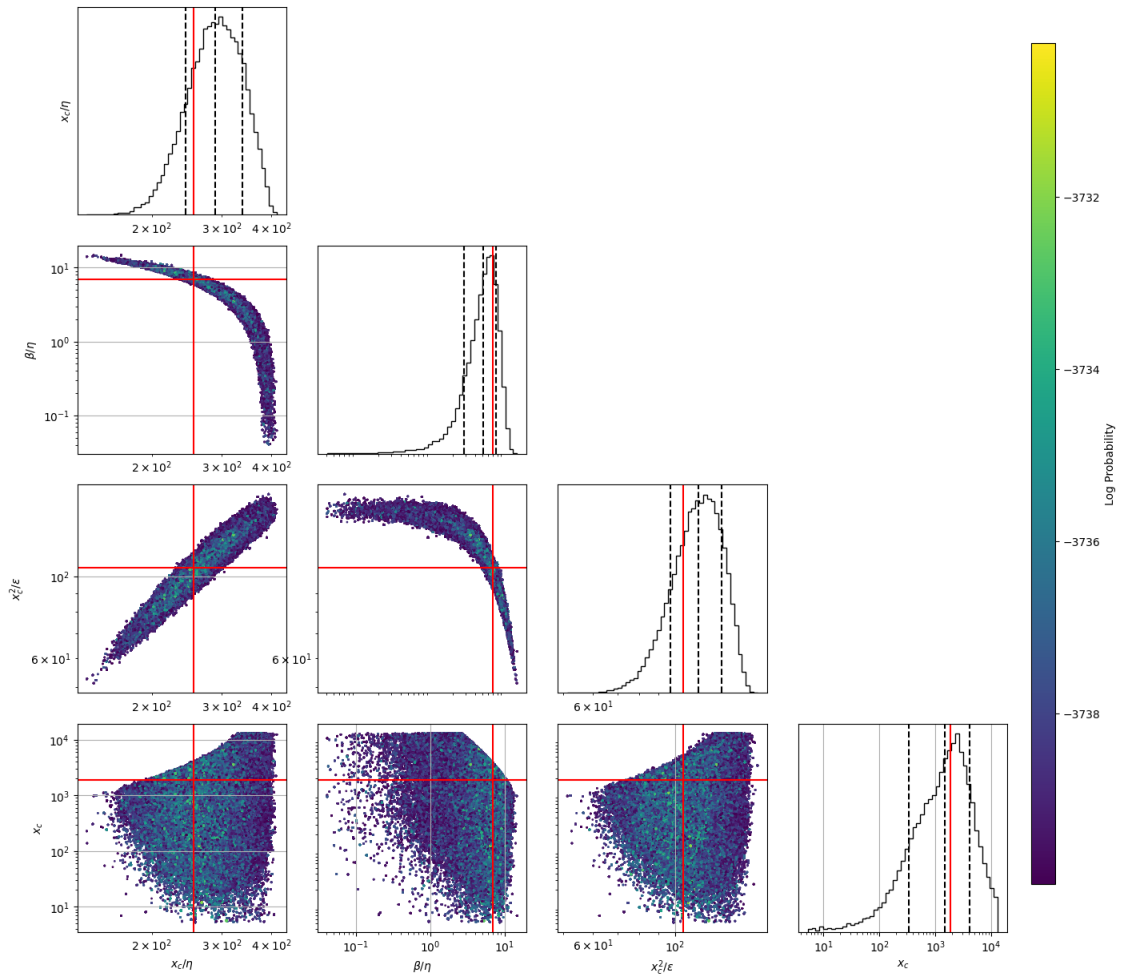

β/η
x_c^2/ε
x_c
x_c/η
2×10^2
3×10^2
4×10^2
10^{-1}
10^0
10^1
6×10^1
10^2
10^3
10^4



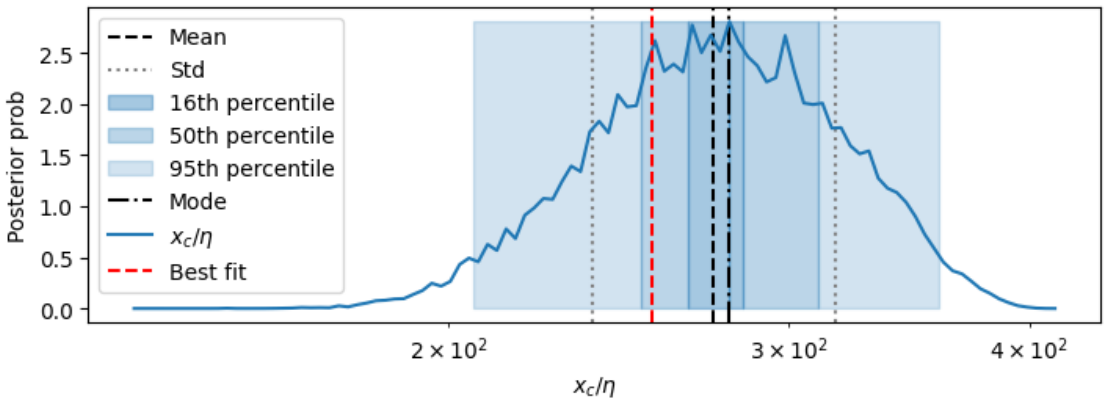
2 2. Heat map corner plot of raw samples

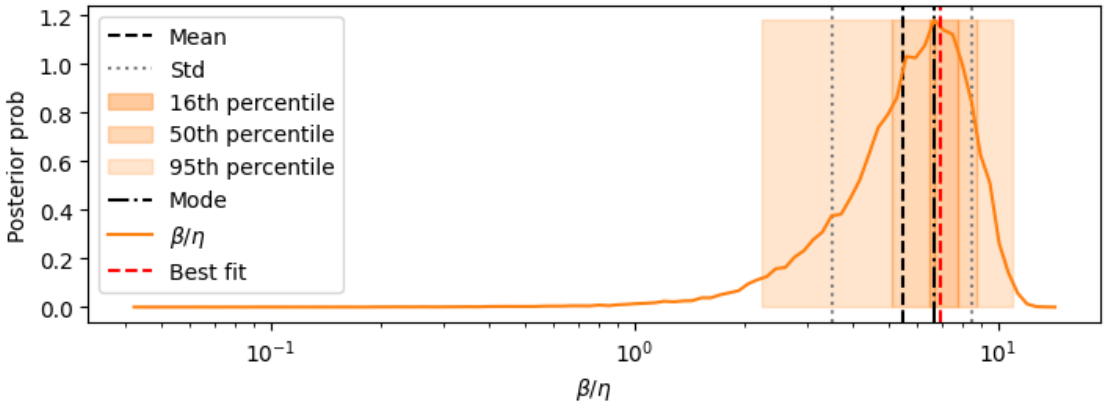
This plot shows all the raw sample points and their lnprobability

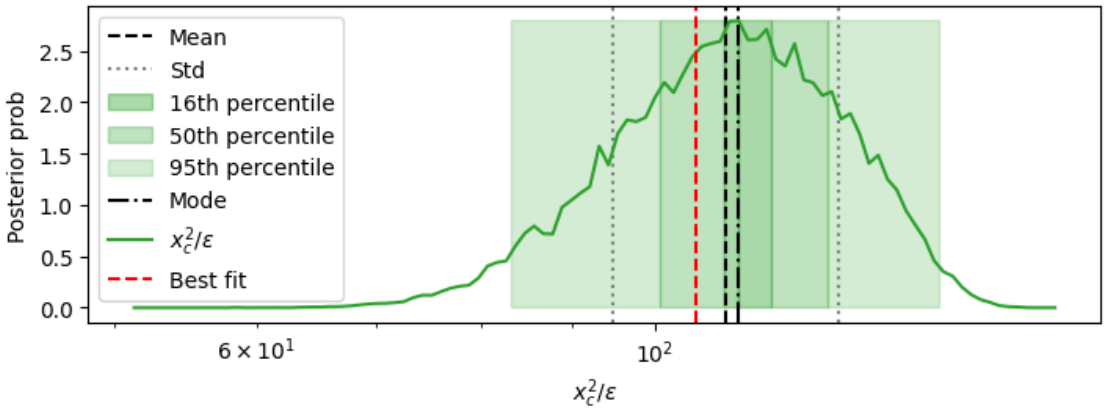


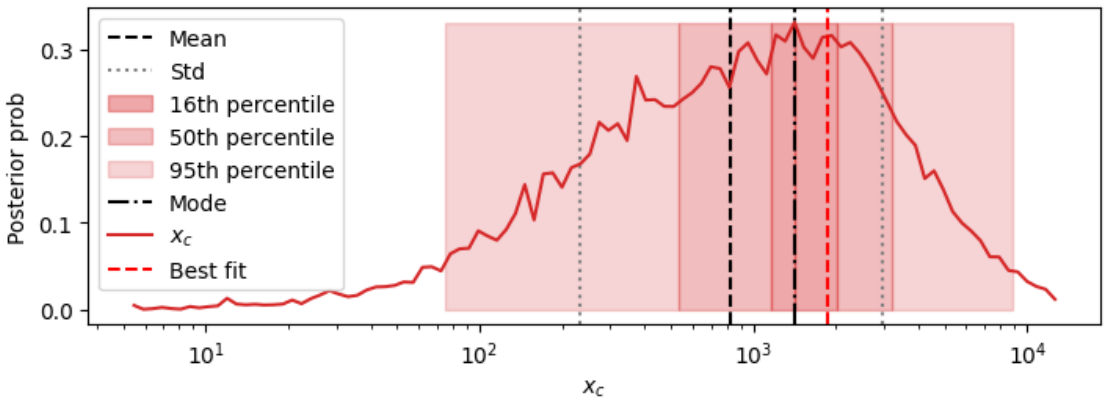
3 3. Posterior distributions of parameters

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

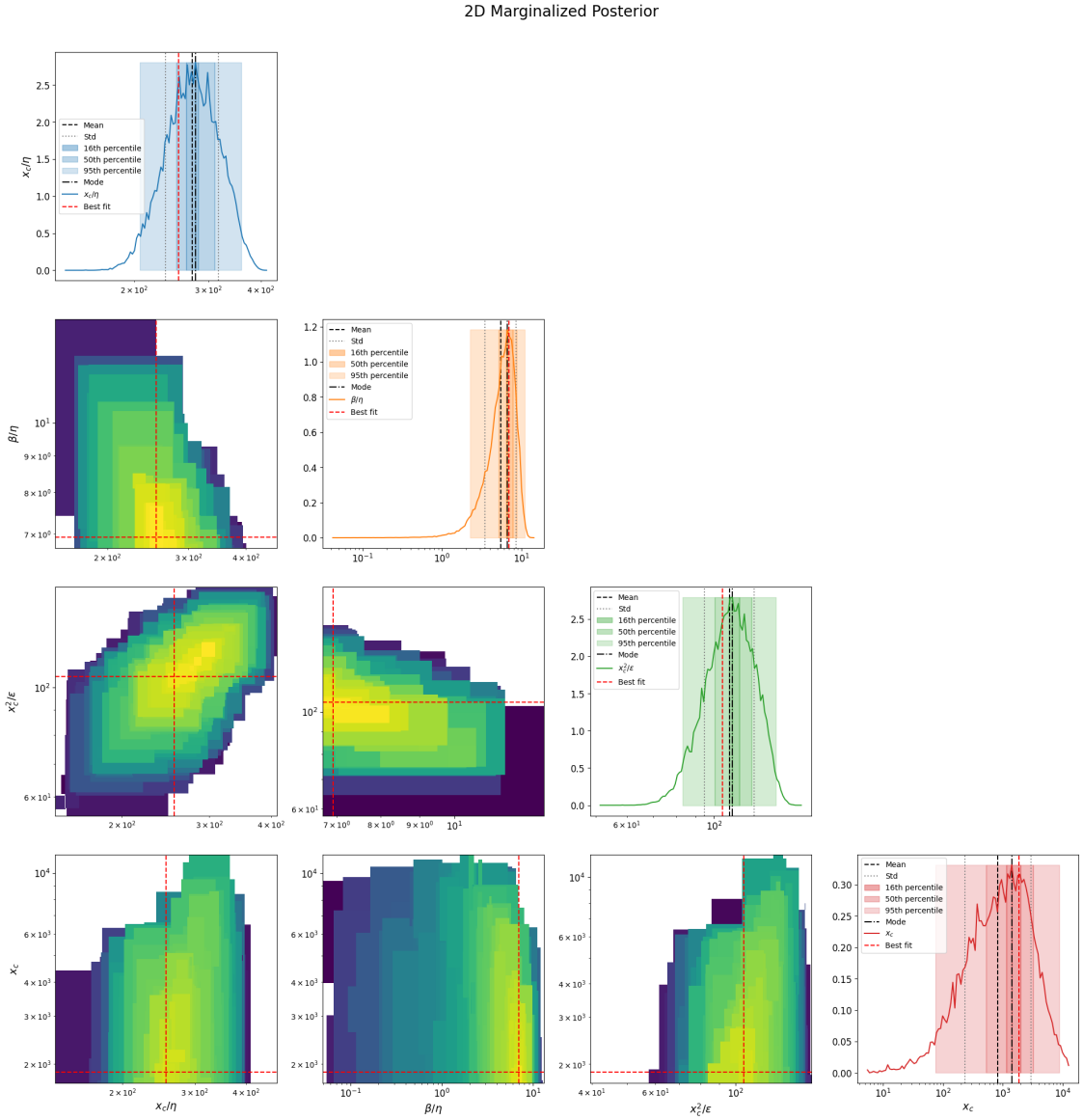

Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit
Posterior prob
2×10^2
3×10^2
4×10^2
x_c/η


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
β/η
Best fit
Posterior prob
10^{-1}
10^0
10^1
β/η


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c^2/ε
Best fit
Posterior prob
6×10^1
10^2
x_c^2/ε


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c
Best fit
Posterior prob
10^1
10^2
10^3
10^4
x_c

2D marginalizations of posterior distributions



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	274.332	[42.856, 37.065]	276.519	

beta/eta	5.452	[3.058, 1.959]	6.672
xc^2/epsilon	109.51	[17.055, 14.757]	111.323
xc	826.809	[2117.943, 594.663]	1530.21
eta	1.423	[6.264, 1.159]	5.231
beta	6.778	[30.834, 5.556]	18.565
epsilon	1413.1	[40873.942, 1365.879]	24551.4
sqrt(xc/eta)	16.557	[1.194, 1.114]	16.537
s= eta^0.5*xc^1.5/epsilon	6.611	[0.504, 0.469]	6.697
beta*xc/epsilon	2.2	[1.158, 0.758]	2.633
eta*xc/epsilon	0.399	[0.0147, 0.0142]	0.398
Fx=beta^2/eta*xc	0.108	[0.191, 0.0689]	0.16
Dx =beta*epsilon/eta*xc^2	0.0496	[0.0385, 0.0217]	0.0595
Pk=beta*k/epsilon	0.00218	[0.0132, 0.00187]	0.00128
Fk=beta^2/eta*k	72.565	[406.368, 61.57]	168.973
Dk =beta*epsilon/eta*k^2	34155.639	[766547.914, 32698.661]	269077.292
Fk^2/Dk=beta^3/eta*epsilon	0.161	[1.226, 0.143]	0.527
beta^2/epsilon	0.0344	[0.12, 0.0267]	0.0672
k/beta	0.0647	[0.271, 0.0522]	0.0551
k/epsilon	0.000287	[0.0073, 0.000276]	0.00002
best fit_MedianLifetime	23.06	0.51	23.06
best fit_MaxLifetime	48.11	0	48.11
data_MedianLifetime	22.0	0.55	22.0
data_MaxLifetime	47.0	0	47.0

	percentile_16	percentile_50 \
xc/eta	[265.982, 284.301]	[248.844, 307.273]
beta/eta	[6.108, 7.289]	[4.826, 8.2]
xc^2/epsilon	[108.056, 116.063]	[100.601, 123.187]
xc	[1258.328, 2176.076]	[492.039, 2975.812]
eta	[3.379, 7.478]	[0.876, 10.274]
beta	[15.924, 36.106]	[6.34, 81.868]
epsilon	[8865.392, 42489.337]	[385.953, 58129.468]
sqrt(xc/eta)	[16.309, 16.861]	[15.775, 17.432]
s= eta^0.5*xc^1.5/epsilon	[6.582, 6.815]	[6.357, 7.056]
beta*xc/epsilon	[2.41, 2.877]	[2.019, 3.237]
eta*xc/epsilon	[0.395, 0.402]	[0.389, 0.409]
Fx=beta^2/eta*xc	[0.132, 0.194]	[0.0792, 0.284]
Dx =beta*epsilon/eta*xc^2	[0.0536, 0.0661]	[0.0406, 0.0815]
Pk=beta*k/epsilon	[0.000917, 0.00231]	[0.000617, 0.00865]
Fk=beta^2/eta*k	[114.859, 248.582]	[45.478, 627.818]
Dk =beta*epsilon/eta*k^2	[121406.901, 596363.045]	[14539.637, 1723279.11]
Fk^2/Dk=beta^3/eta*epsilon	[0.331, 0.697]	[0.157, 1.219]
beta^2/epsilon	[0.0555, 0.0925]	[0.0293, 0.136]
k/beta	[0.0314, 0.0711]	[0.00749, 0.0788]
k/epsilon	[1.18e-05, 5.64e-05]	[8.6e-06, 0.000946]
best fit_MedianLifetime	[22.57, 23.57]	[22.57, 23.57]
best fit_MaxLifetime	[48.11, 48.11]	[48.11, 48.11]

data_MedianLifetime	[21.5, 22.55]	[21.5, 22.55]
data_MaxLifetime	[47.0, 47.0]	[47.0, 47.0]

	percentile_95	max_likelihood	mode_overall
xc/eta	[206.05, 358.936]	255.043	237.43
beta/eta	[2.116, 10.378]	6.921	8.241
xc^2/epsilon	[82.155, 142.121]	105.277	92.727
xc	[69.571, 8229.679]	1865.315	267.873
eta	[0.0637, 26.646]	7.314	0.0448
beta	[0.326, 100.461]	50.62	0.311
epsilon	[2.563, 609915.036]	33049.914	1.314
sqrt(xc/eta)	[14.434, 18.841]	15.97	15.409
s= eta^0.5*xc^1.5/epsilon	[5.688, 7.564]	6.592	6.018
beta*xc/epsilon	[0.937, 4.1]	2.857	3.219
eta*xc/epsilon	[0.371, 0.427]	0.413	0.391
Fx=beta^2/eta*xc	[0.0132, 0.539]	0.188	0.286
Dx =beta*epsilon/eta*xc^2	[0.0153, 0.133]	0.0657	0.0889
Pk=beta*k/epsilon	[5.03e-05, 0.106]	0.000766	0.00601
Fk=beta^2/eta*k	[2.073, 1585.614]	700.717	153.26
Dk =beta*epsilon/eta*k^2	[86.126, 5943031.151]	914991.867	25510.22
Fk^2/Dk=beta^3/eta*epsilon	[0.00149, 3.094]	0.537	0.921
beta^2/epsilon	[0.00136, 0.292]	0.0775	0.0496
k/beta	[0.00497, 1.249]	0.00988	0.246
k/epsilon	[7e-07, 0.143]	0.000015	0.00601
best fit_MedianLifetime	[22.57, 23.57]	23.06	NaN
best fit_MaxLifetime	[48.11, 48.11]	48.11	NaN
data_MedianLifetime	[21.5, 22.55]	22.0	NaN
data_MaxLifetime	[47.0, 47.0]	47.0	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')
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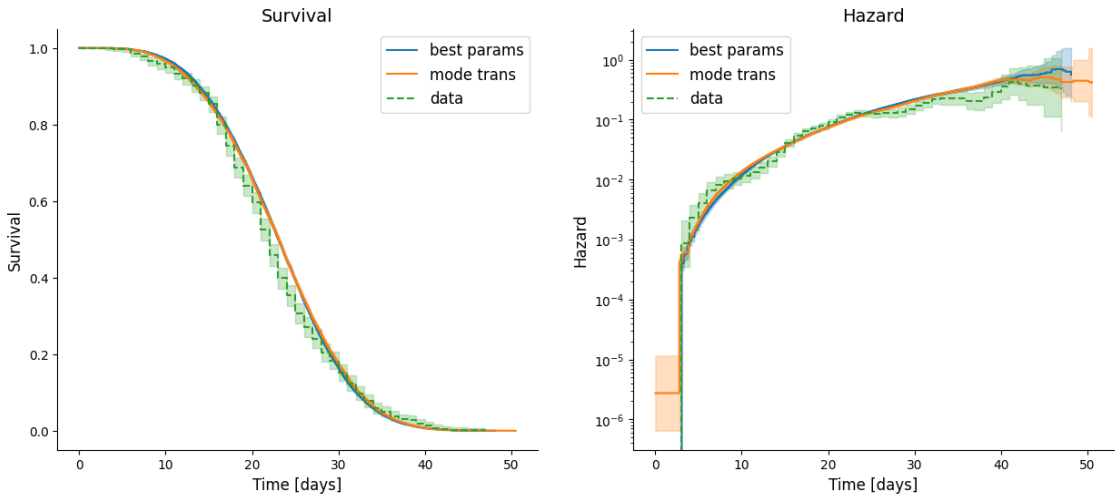


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Text(0, 0.5, 'Prob density')
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