drosophila_217_post.csv_run_10_20250525_211038

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_217_post.csv
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Reading drosofila_217_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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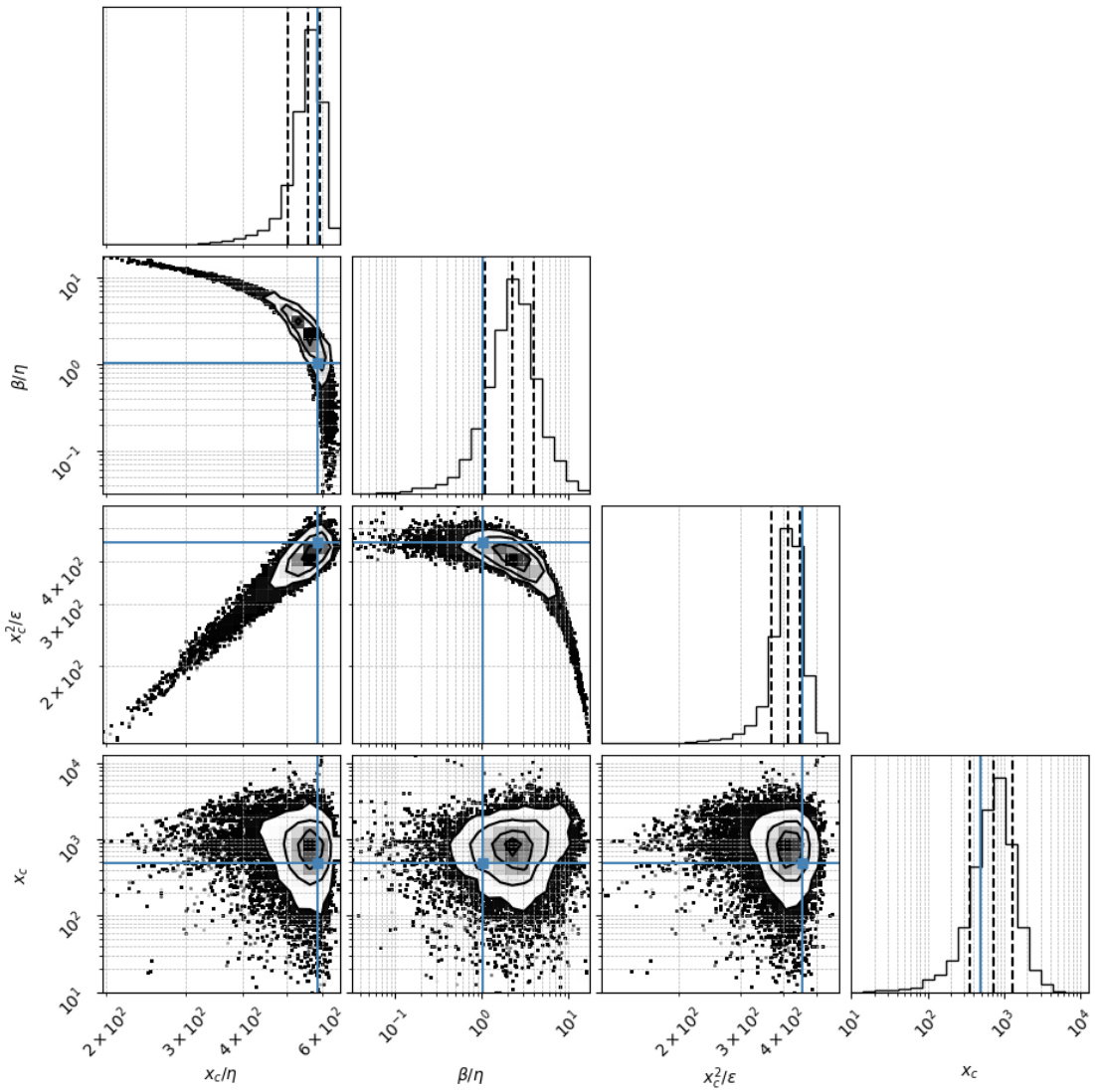
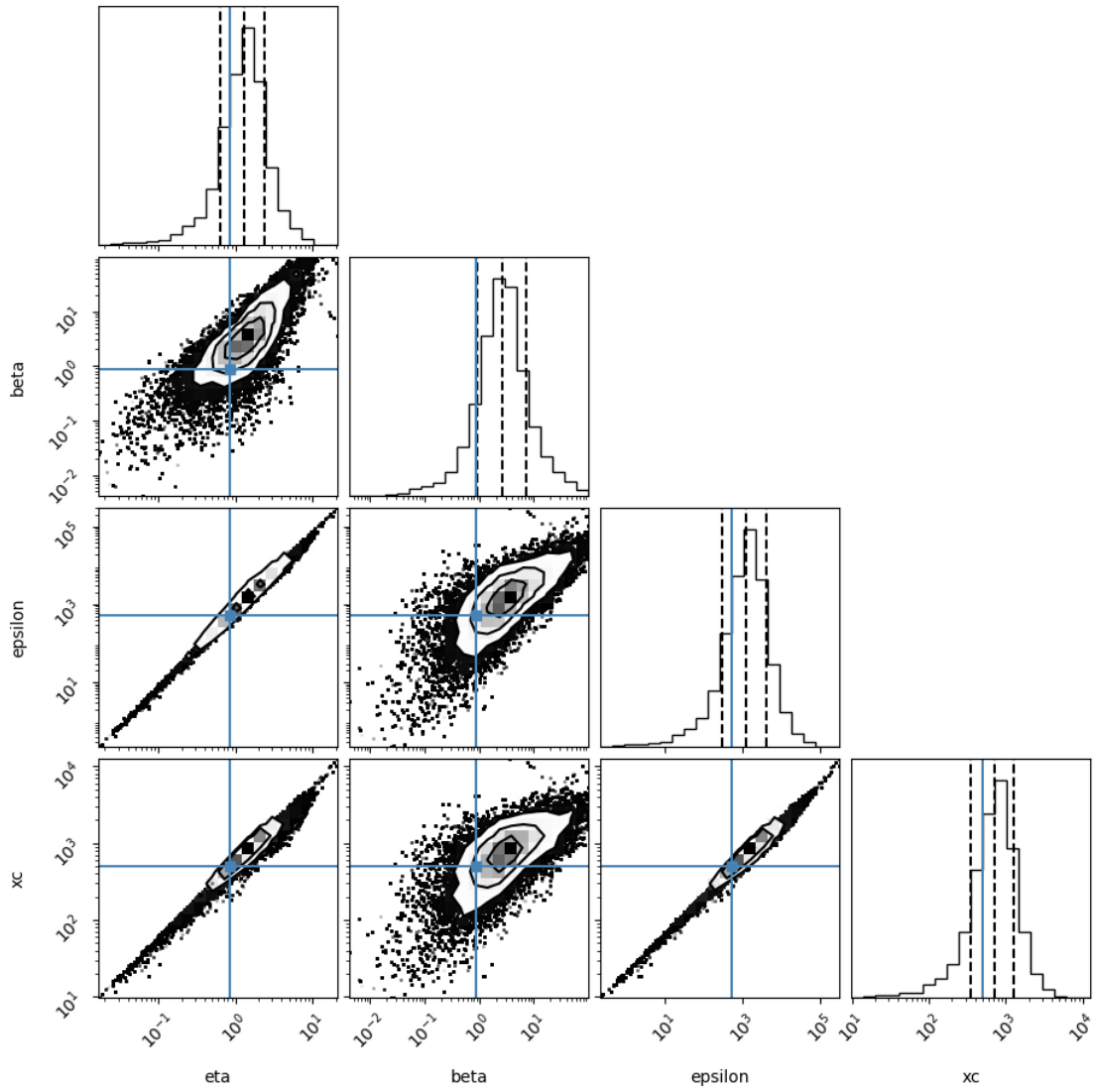
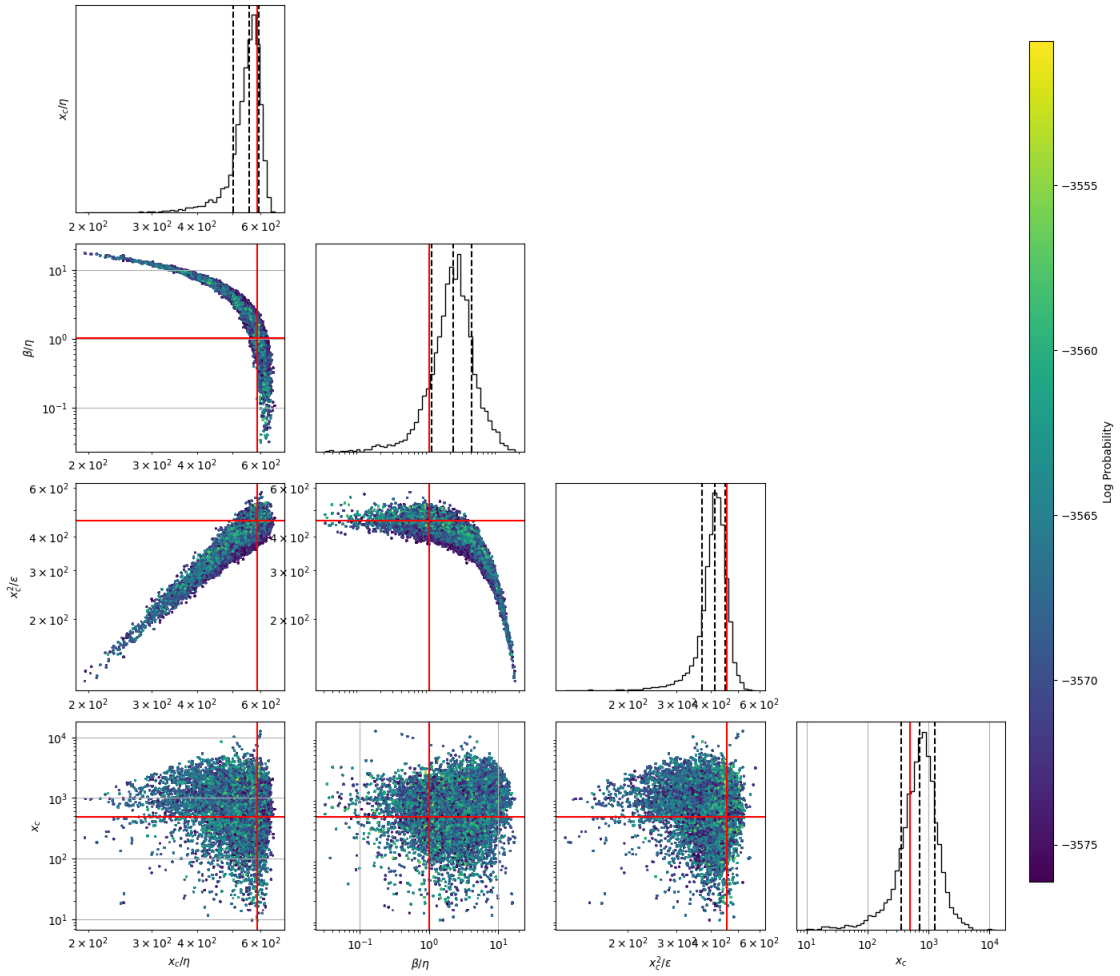

β/η
x_c^2/ε
x_c
x_c/η
β/η
x_c^2/ε
x_c



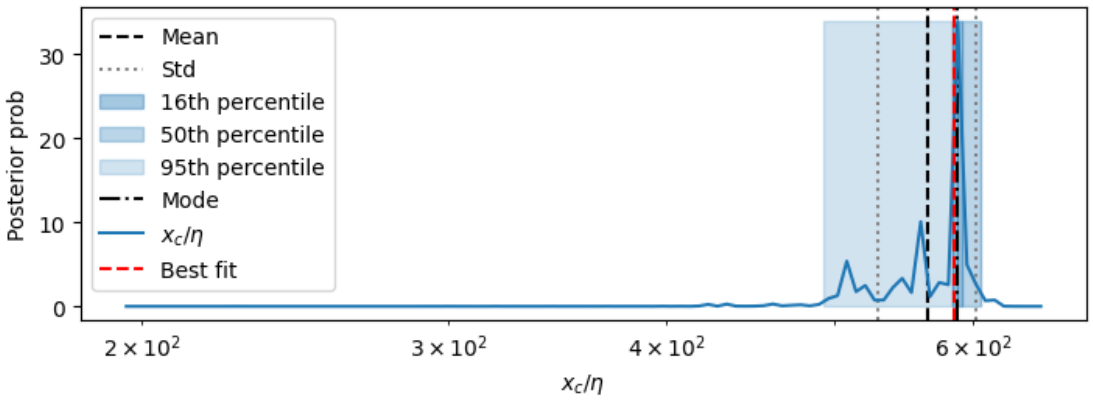
2 2. Heat map corner plot of raw samples

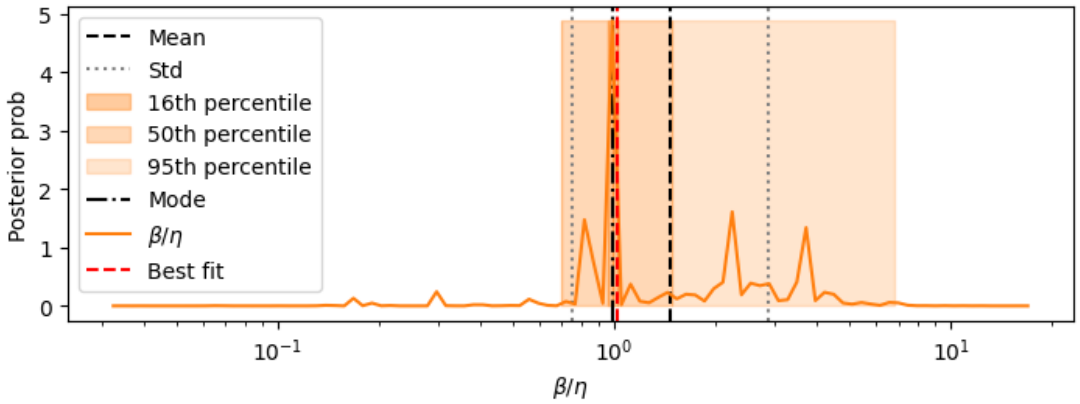
This plot shows all the raw sample points and their lnprobability

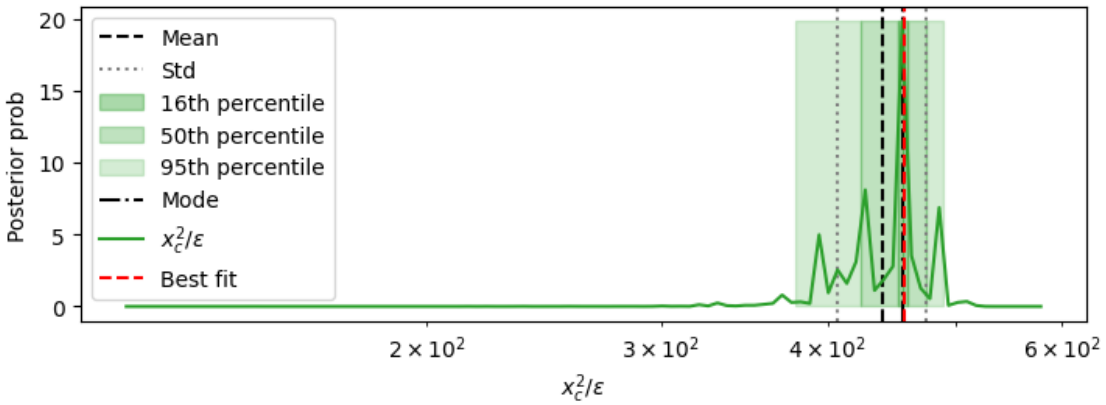


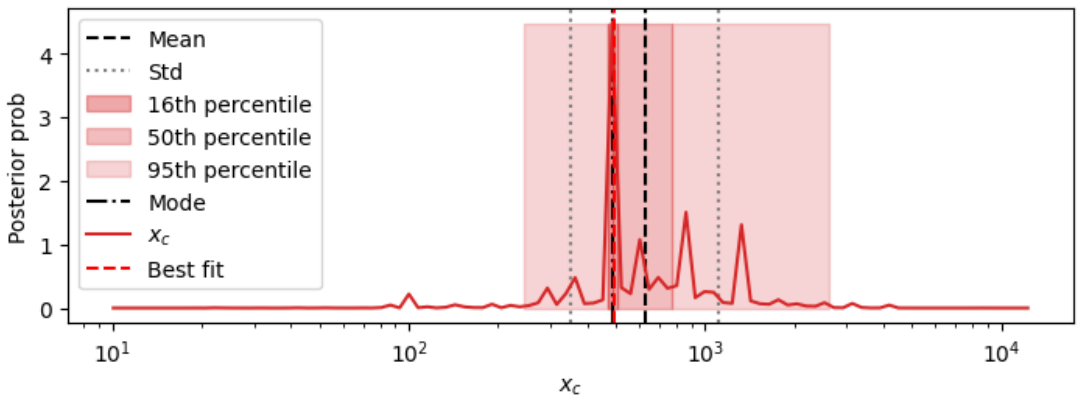
3 3. Posterior distributions of parameters

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

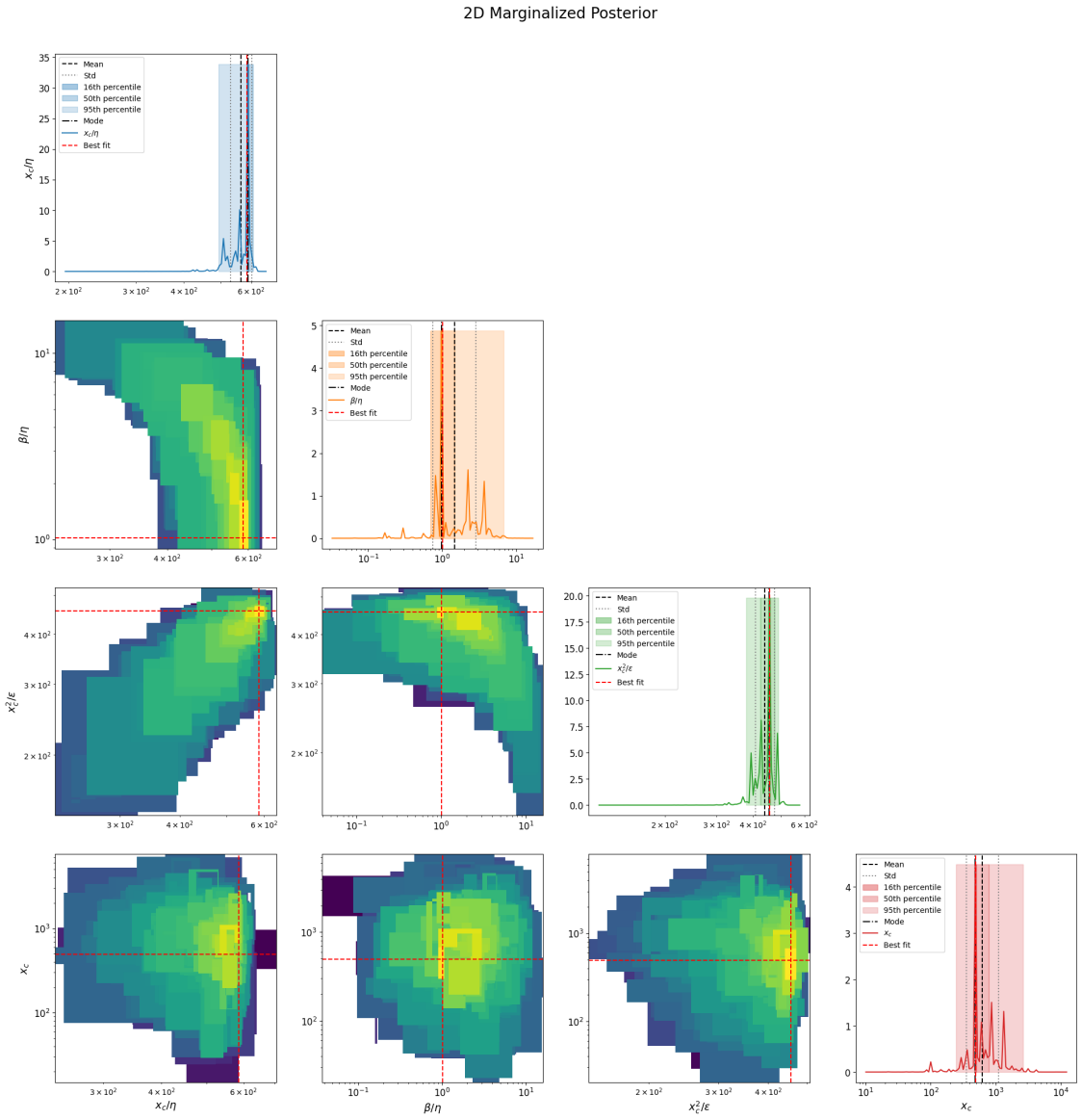

Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit
Posterior prob
x_c/η


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


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


Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c
Best fit
Posterior prob
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	564.703	[37.603, 35.255]	588.022	

beta/eta	1.468	[1.411, 0.719]	2.392
xc^2/epsilon	439.582	[34.689, 32.152]	448.203
xc	625.092	[489.438, 274.505]	560.846
eta	1.182	[2.846, 0.835]	0.57
beta	1.506	[7.329, 1.249]	6.214
epsilon	991.981	[10112.467, 903.366]	211.347
sqrt(xc/eta)	23.767	[0.767, 0.743]	24.102
s= eta^0.5*xc^1.5/epsilon	18.526	[0.928, 0.884]	17.965
beta*xc/epsilon	1.166	[1.051, 0.553]	1.805
eta*xc/epsilon	0.78	[0.0274, 0.0264]	0.777
Fx=beta^2/eta*xc	0.00339	[0.00975, 0.00252]	0.00882
Dx =beta*epsilon/eta*xc^2	0.00314	[0.00328, 0.0016]	0.00512
Pk=beta*k/epsilon	0.000791	[0.000747, 0.000384]	0.000846
Fk=beta^2/eta*k	3.16	[14.069, 2.58]	21.166
Dk =beta*epsilon/eta*k^2	2996.252	[18342.748, 2575.543]	5375.378
Fk^2/Dk=beta^3/eta*epsilon	0.00149	[0.0129, 0.00134]	0.00105
beta^2/epsilon	0.00209	[0.0111, 0.00176]	0.00113
k/beta	0.426	[1.249, 0.318]	0.546
k/epsilon	0.00077	[0.00408, 0.000648]	0.00236
best fit_MedianLifetime	31.79	0.51	31.79
best fit_MaxLifetime	57.05	0	57.05
data_MedianLifetime	31.0	0.47	31.0
data_MaxLifetime	53.0	0	53.0

	percentile_16	percentile_50	\
xc/eta	[577.353, 591.622]	[556.592, 598.888]	
beta/eta	[2.175, 2.63]	[1.917, 4.093]	
xc^2/epsilon	[444.637, 459.075]	[423.827, 466.469]	
xc	[541.071, 671.106]	[468.701, 894.351]	
eta	[0.444, 0.682]	[0.444, 2.472]	
beta	[4.829, 7.995]	[1.177, 13.237]	
epsilon	[148.377, 346.799]	[128.8, 3843.776]	
sqrt(xc/eta)	[24.028, 24.323]	[23.592, 24.472]	
s= eta^0.5*xc^1.5/epsilon	[17.872, 18.248]	[17.687, 18.827]	
beta*xc/epsilon	[1.644, 2.109]	[1.282, 3.064]	
eta*xc/epsilon	[0.775, 0.783]	[0.759, 0.791]	
Fx=beta^2/eta*xc	[0.00625, 0.0109]	[0.0036, 0.0248]	
Dx =beta*epsilon/eta*xc^2	[0.00456, 0.00621]	[0.00362, 0.00988]	
Pk=beta*k/epsilon	[0.000716, 0.000894]	[0.000574, 0.00111]	
Fk=beta^2/eta*k	[14.305, 26.774]	[2.552, 31.316]	
Dk =beta*epsilon/eta*k^2	[4231.171, 8010.441]	[1180.508, 15165.343]	
Fk^2/Dk=beta^3/eta*epsilon	[0.00078, 0.00142]	[0.000523, 0.0128]	
beta^2/epsilon	[0.000918, 0.00138]	[0.0008, 0.00624]	
k/beta	[0.425, 0.635]	[0.171, 1.164]	
k/epsilon	[0.00166, 0.00337]	[0.000264, 0.00388]	
best fit_MedianLifetime	[31.3, 32.3]	[31.3, 32.3]	
best fit_MaxLifetime	[57.05, 57.05]	[57.05, 57.05]	

data_MedianLifetime	[30.58, 31.47]	[30.58, 31.47]
data_MaxLifetime	[53.0, 53.0]	[53.0, 53.0]

	percentile_95	max_likelihood	mode_overall
xc/eta	[492.631, 613.69]	585.496	585.496
beta/eta	[0.697, 5.271]	1.018	1.018
xc^2/epsilon	[372.972, 497.255]	456.506	456.506
xc	[245.631, 2274.24]	493.355	493.355
eta	[0.188, 7.229]	0.843	4.416
beta	[0.0946, 29.659]	0.858	3.942
epsilon	[20.466, 27866.514]	533.179	14184.322
sqrt(xc/eta)	[22.195, 24.773]	24.197	24.197
s= eta^0.5*xc^1.5/epsilon	[16.617, 20.249]	18.866	18.866
beta*xc/epsilon	[0.536, 3.93]	0.794	0.794
eta*xc/epsilon	[0.724, 0.829]	0.78	0.78
Fx=beta^2/eta*xc	[0.000789, 0.0568]	0.00177	0.00177
Dx =beta*epsilon/eta*xc^2	[0.00143, 0.0145]	0.00223	0.00223
Pk=beta*k/epsilon	[0.000109, 0.00654]	0.000805	0.000805
Fk=beta^2/eta*k	[0.243, 280.912]	1.748	1.748
Dk =beta*epsilon/eta*k^2	[239.375, 268060.869]	2171.961	5076.738
Fk^2/Dk=beta^3/eta*epsilon	[0.000158, 0.571]	0.00141	0.000817
beta^2/epsilon	[0.000352, 0.0964]	0.00138	0.00138
k/beta	[0.0152, 2.884]	0.583	0.583
k/epsilon	[1.79e-05, 0.0184]	0.000938	0.000938
best fit_MedianLifetime	[31.3, 32.3]	31.79	NaN
best fit_MaxLifetime	[57.05, 57.05]	57.05	NaN
data_MedianLifetime	[30.58, 31.47]	31.0	NaN
data_MaxLifetime	[53.0, 53.0]	53.0	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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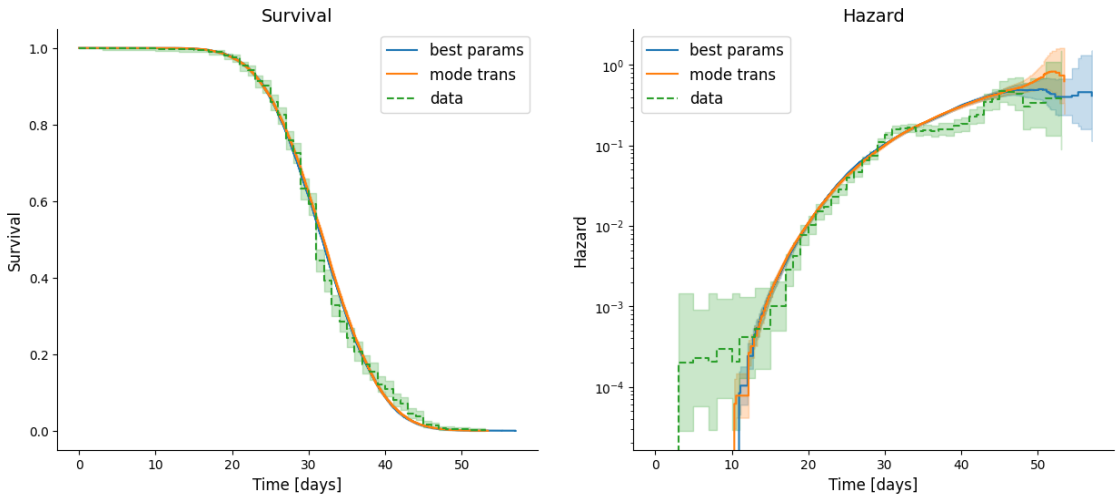


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Text(0, 0.5, 'Prob density')
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