

drosophila_853_post.csv_run_7_20250529_142149

May 29, 2025

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

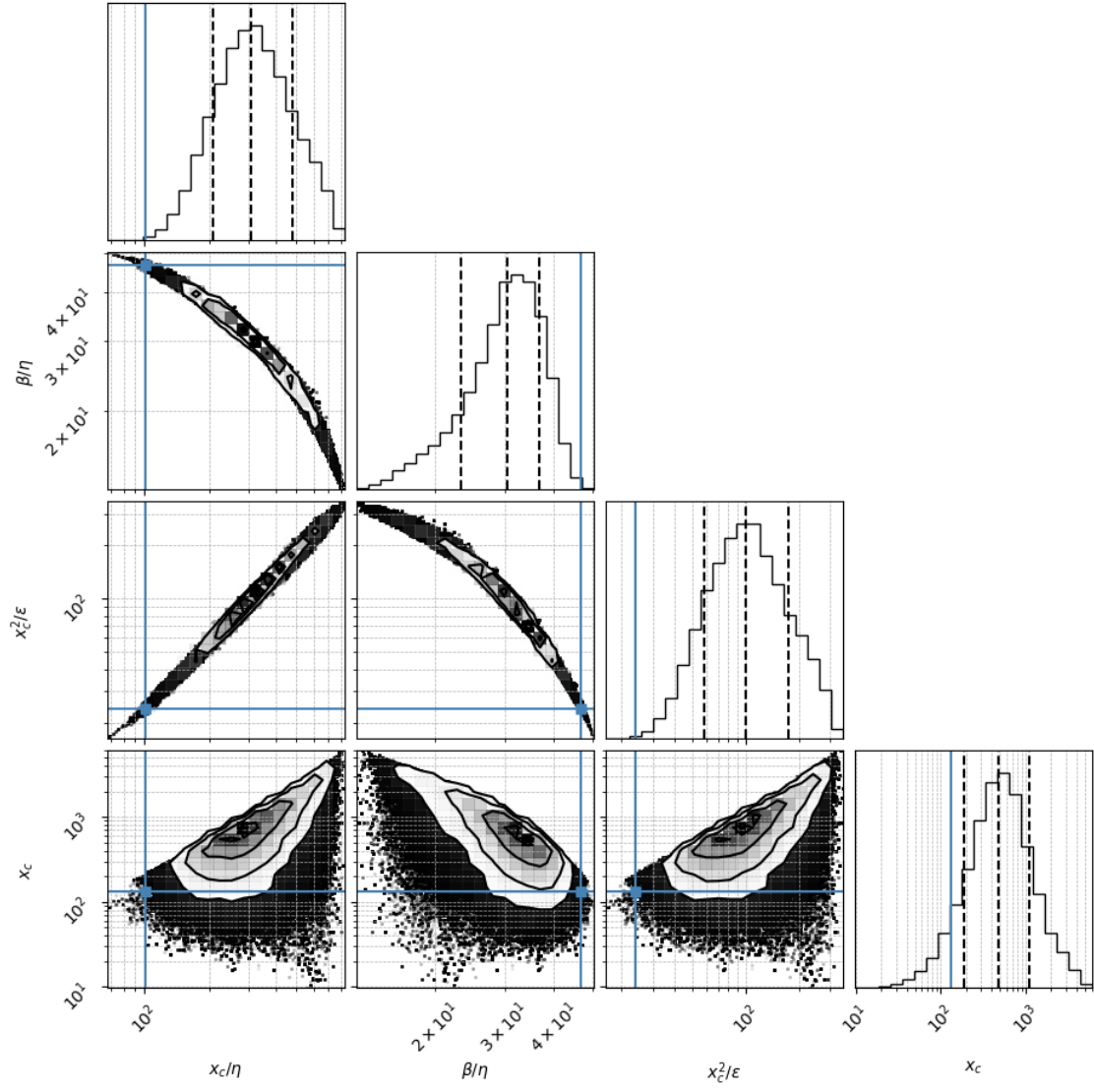
Loading file from: /Users/navehr/Dropbox/naveh/weizmann/uri_alon/aging/code_3/bayesian02/posterior_csvs_bayesian01/DROSOPHILA/drosophila_853_post.csv

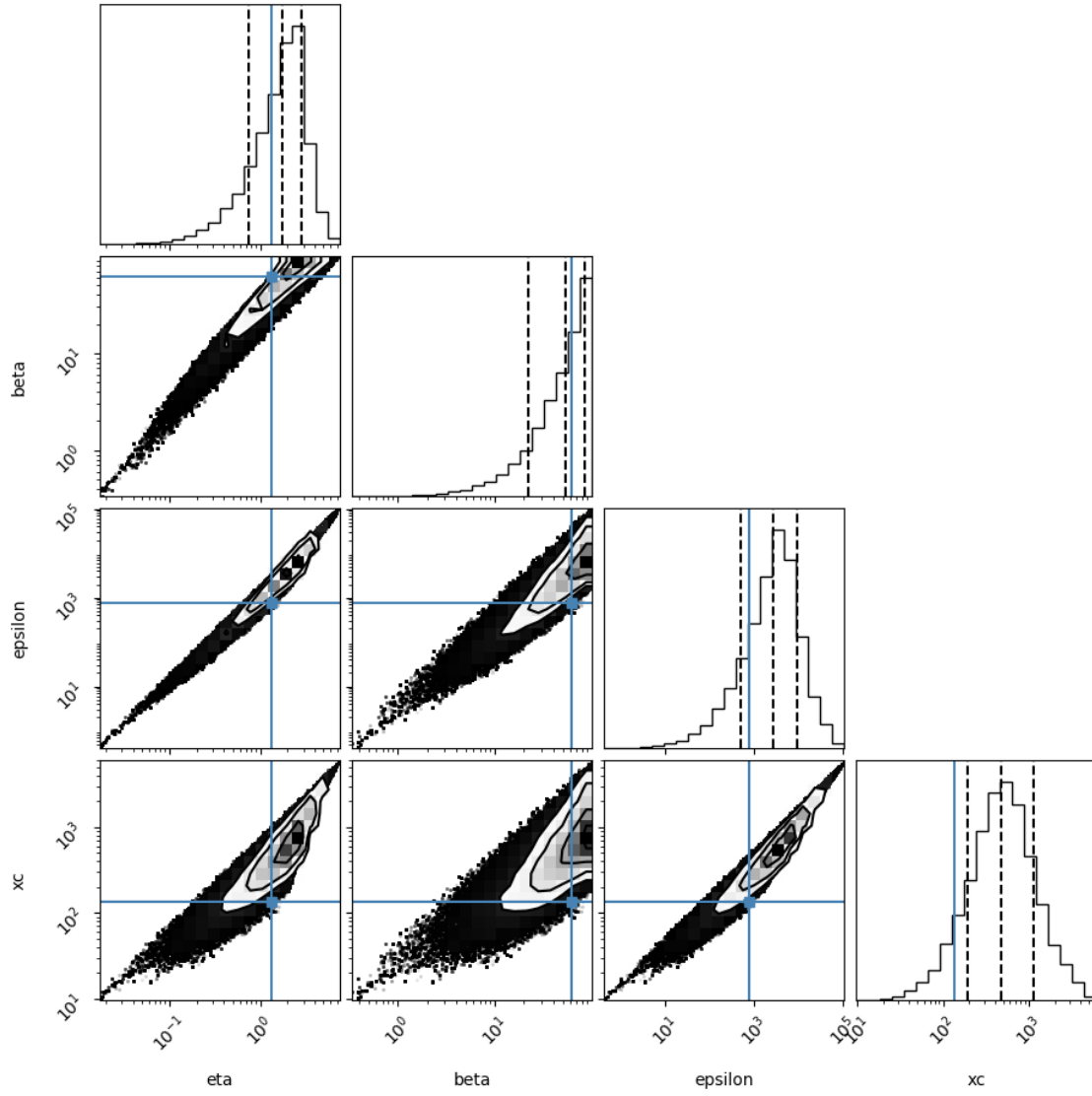
Reading drosophila_853_seed

1 # 1. Density corner 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

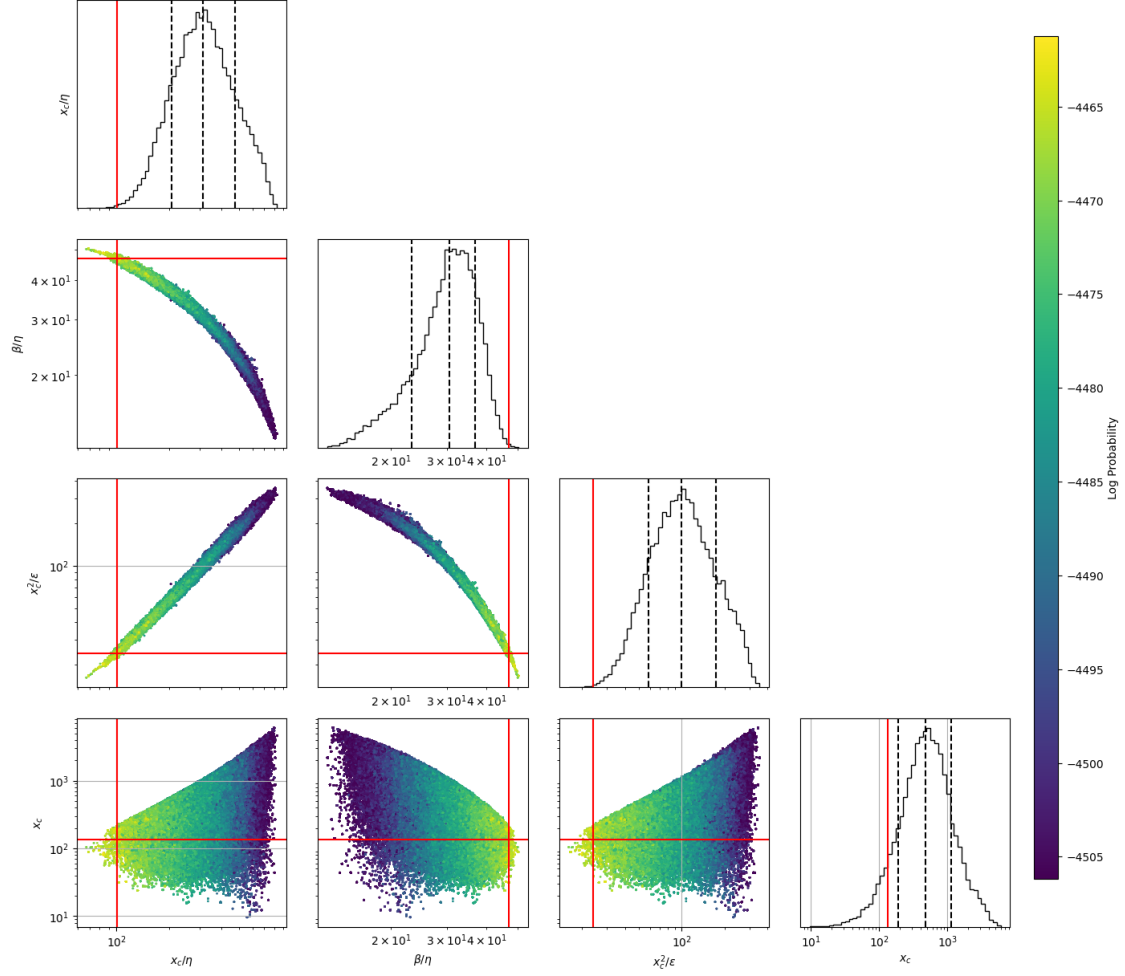
(16,)





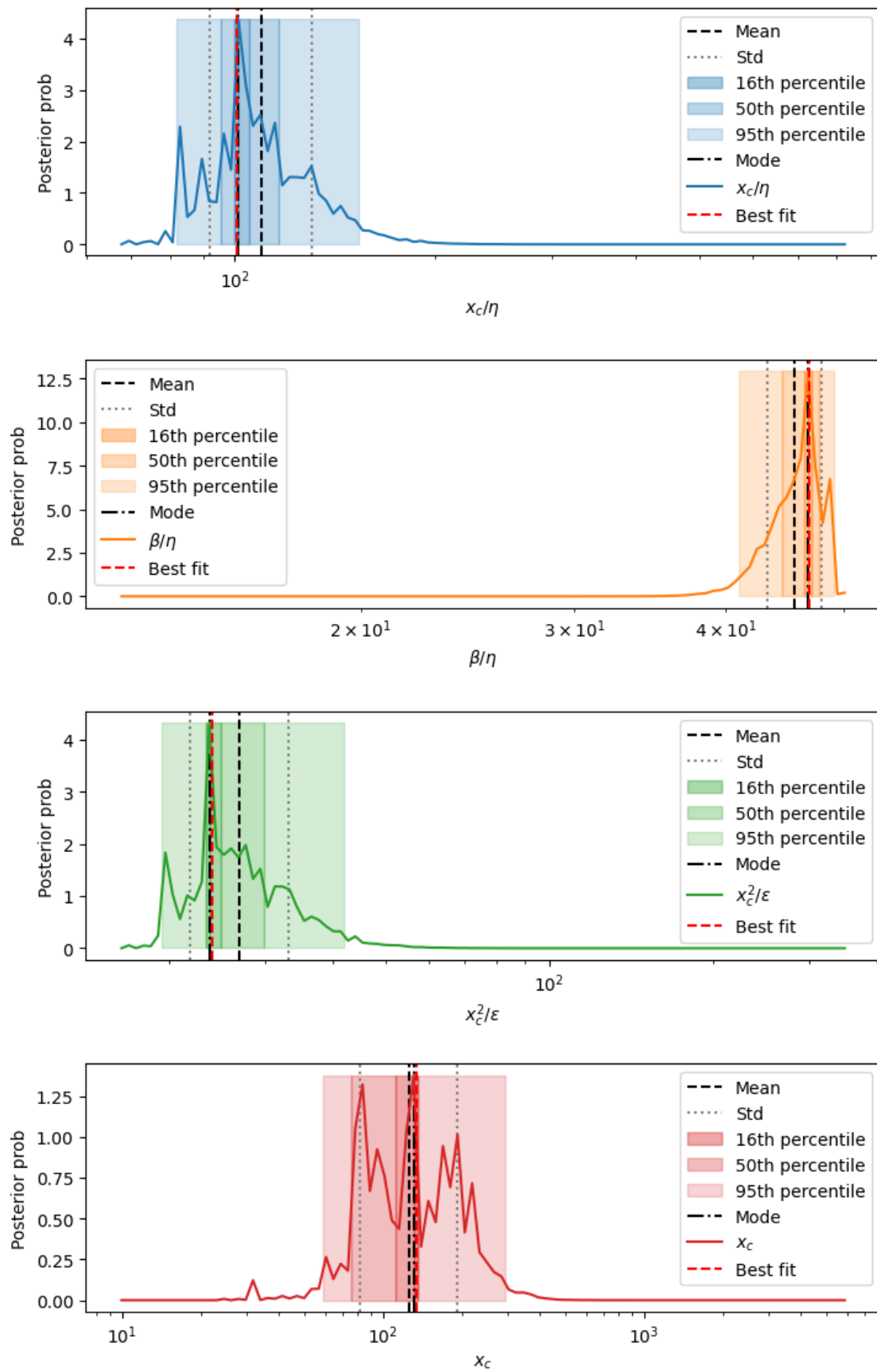
2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability



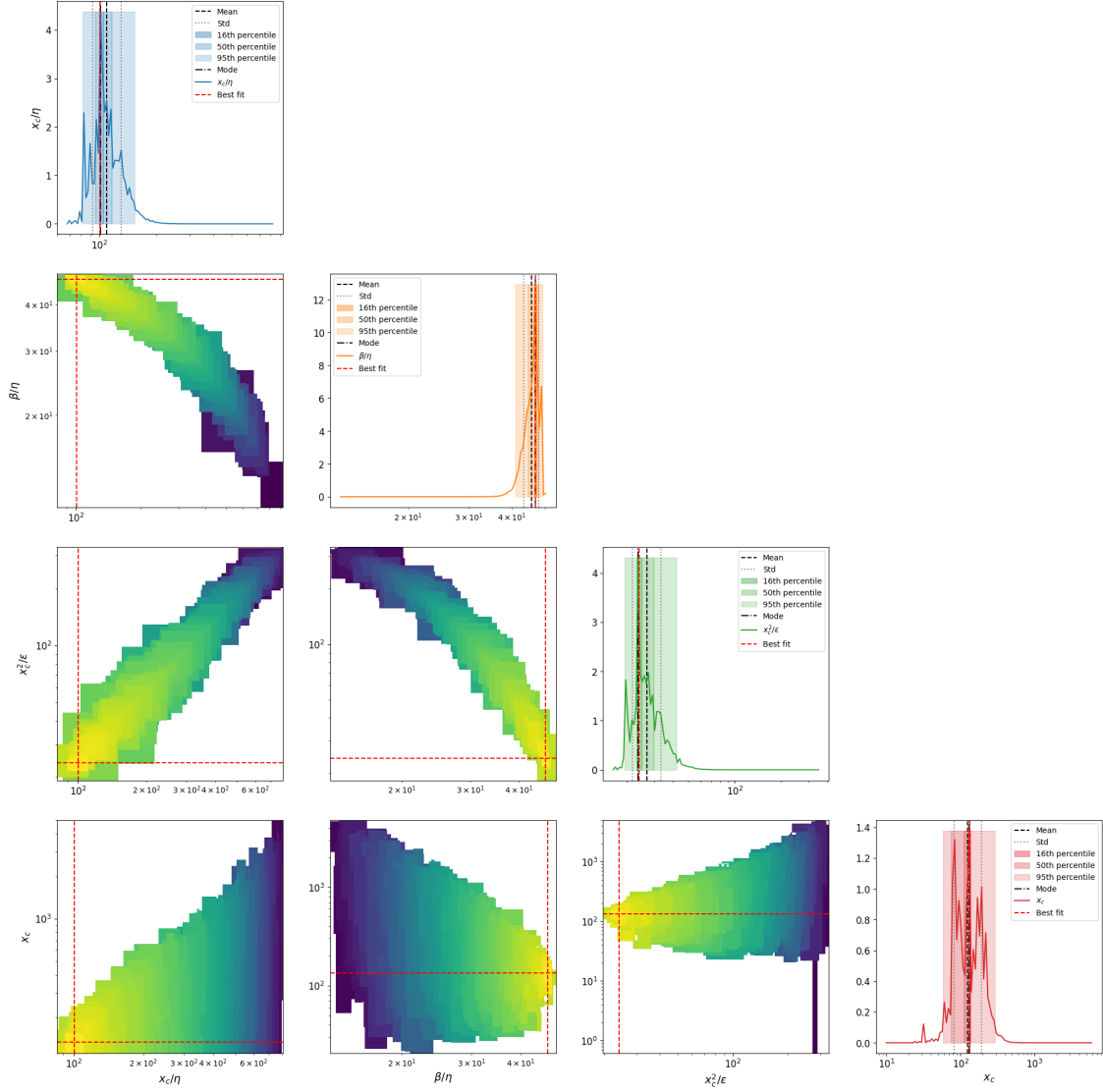
3. Posterior distributions of parameters

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



2D marginalizations of posterior distributions

2D Marginalized Posterior



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	109.58	[20.998, 17.621]	103.986

beta/eta	45.599	[2.371, 2.254]	46.148
xc^2/epsilon	26.926	[6.283, 5.094]	25.206
xc	125.425	[67.53, 43.896]	95.015
eta	1.074	[0.546, 0.362]	0.926
beta	50.124	[26.419, 17.301]	55.233
epsilon	478.052	[609.768, 267.968]	320.187
sqrt(xc/eta)	10.641	[1.022, 0.932]	10.197
s= eta^0.5*xc^1.5/epsilon	2.634	[0.364, 0.32]	2.433
beta*xc/epsilon	11.171	[0.296, 0.288]	11.174
eta*xc/epsilon	0.247	[0.0108, 0.0104]	0.242
Fx=beta^2/eta*xc	18.131	[5.812, 4.401]	20.548
Dx =beta*epsilon/eta*xc^2	1.623	[0.488, 0.375]	1.861
Pk=beta*k/epsilon	0.0476	[0.026, 0.0168]	0.0479
Fk=beta^2/eta*k	4702.841	[2664.201, 1700.725]	5428.218
Dk =beta*epsilon/eta*k^2	103634.365	[139448.659, 59451.594]	64278.89
Fk^2/Dk=beta^3/eta*epsilon	221.225	[71.111, 53.813]	239.548
epsilon/beta^2	0.199	[0.0486, 0.0391]	0.191
k/beta	0.00975	[0.00533, 0.00345]	0.00905
k^2/epsilon	0.000479	[0.000639, 0.000274]	0.000689
best fit_MedianLifetime	46.33	0.51	46.33
best fit_MaxLifetime	75.08	0	75.08
data_MedianLifetime	47.0	0.52	47.0
data_MaxLifetime	66.0	0	66.0

	percentile_16 \
xc/eta	[100.122, 107.998]
beta/eta	[45.197, 46.469]
xc^2/epsilon	[24.064, 26.403]
xc	[86.261, 104.658]
eta	[0.845, 1.015]
beta	[50.709, 60.161]
epsilon	[265.521, 386.107]
sqrt(xc/eta)	[10.006, 10.392]
s= eta^0.5*xc^1.5/epsilon	[2.411, 2.548]
beta*xc/epsilon	[11.02, 11.226]
eta*xc/epsilon	[0.241, 0.245]
Fx=beta^2/eta*xc	[18.992, 21.095]
Dx =beta*epsilon/eta*xc^2	[1.74, 1.989]
Pk=beta*k/epsilon	[0.0432, 0.0532]
Fk=beta^2/eta*k	[4913.847, 5996.432]
Dk =beta*epsilon/eta*k^2	[53741.853, 76881.899]
Fk^2/Dk=beta^3/eta*epsilon	[218.619, 246.96]
epsilon/beta^2	[0.178, 0.196]
k/beta	[0.00831, 0.0104]
k^2/epsilon	[0.000571, 0.00083]
best fit_MedianLifetime	[45.839999999999996, 46.839999999999996]
best fit_MaxLifetime	[75.08, 75.08]

data_MedianLifetime	[46.53, 47.52]
data_MaxLifetime	[66.0, 66.0]
	percentile_50 \
xc/eta	[95.193, 119.471]
beta/eta	[44.574, 47.777]
xc^2/epsilon	[22.621, 29.879]
xc	[80.878, 154.06]
eta	[0.796, 1.375]
beta	[38.14, 67.421]
epsilon	[234.366, 720.65]
sqrt(xc/eta)	[9.881, 11.21]
s= eta^0.5*xc^1.5/epsilon	[2.324, 2.743]
beta*xc/epsilon	[10.918, 11.33]
eta*xc/epsilon	[0.237, 0.251]
Fx=beta^2/eta*xc	[16.224, 23.43]
Dx =beta*epsilon/eta*xc^2	[1.455, 2.08]
Pk=beta*k/epsilon	[0.0376, 0.0703]
Fk=beta^2/eta*k	[3768.135, 6847.633]
Dk =beta*epsilon/eta*k^2	[47695.289, 157342.858]
Fk^2/Dk=beta^3/eta*epsilon	[193.531, 278.975]
epsilon/beta^2	[0.162, 0.215]
k/beta	[0.00661, 0.0124]
k^2/epsilon	[0.00027, 0.000941]
best fit_MedianLifetime	[45.839999999999996, 46.839999999999996]
best fit_MaxLifetime	[75.08, 75.08]
data_MedianLifetime	[46.53, 47.52]
data_MaxLifetime	[66.0, 66.0]
	percentile_95 \
xc/eta	[81.816, 157.704]
beta/eta	[40.449, 49.808]
xc^2/epsilon	[19.381, 41.981]
xc	[58.6, 275.148]
eta	[0.489, 2.105]
beta	[24.179, 100.459]
epsilon	[125.568, 2215.92]
sqrt(xc/eta)	[9.16, 12.879]
s= eta^0.5*xc^1.5/epsilon	[2.159, 3.421]
beta*xc/epsilon	[10.619, 11.758]
eta*xc/epsilon	[0.23, 0.271]
Fx=beta^2/eta*xc	[10.115, 28.905]
Dx =beta*epsilon/eta*xc^2	[0.931, 2.487]
Pk=beta*k/epsilon	[0.0201, 0.0996]
Fk=beta^2/eta*k	[2073.54, 9542.44]
Dk =beta*epsilon/eta*k^2	[23305.185, 408831.428]
Fk^2/Dk=beta^3/eta*epsilon	[118.85, 378.365]

epsilon/beta^2	[0.14, 0.33]
k/beta	[0.00497, 0.0219]
k^2/epsilon	[0.000113, 0.00199]
best fit_MedianLifetime	[45.839999999999996, 46.839999999999996]
best fit_MaxLifetime	[75.08, 75.08]
data_MedianLifetime	[46.53, 47.52]
data_MaxLifetime	[66.0, 66.0]

	max_likelihood	mode_overall
xc/eta	100.606	100.606
beta/eta	46.886	46.886
xc^2/epsilon	24.017	24.017
xc	134.054	134.054
eta	1.332	1.332
beta	62.474	62.474
epsilon	748.258	748.258
sqrt(xc/eta)	10.03	10.03
s= eta^0.5*xc^1.5/epsilon	2.394	2.394
beta*xc/epsilon	11.192	11.192
eta*xc/epsilon	0.239	0.239
Fx=beta^2/eta*xc	21.85	21.85
Dx =beta*epsilon/eta*xc^2	1.952	1.952
Pk=beta*k/epsilon	0.0417	0.0417
Fk=beta^2/eta*k	5858.223	5858.223
Dk =beta*epsilon/eta*k^2	140330.203	140330.203
Fk^2/Dk=beta^3/eta*epsilon	244.557	244.557
epsilon/beta^2	0.192	0.192
k/beta	0.008	0.008
k^2/epsilon	0.000334	0.000334
best fit_MedianLifetime	46.33	NaN
best fit_MaxLifetime	75.08	NaN
data_MedianLifetime	47.0	NaN
data_MaxLifetime	66.0	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

