mice_M_post.csv_run_2_20250529_134354

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/baysian02/posterior_csvs_baysian01/mice_M_post.csv
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Reading Mice_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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(16,)
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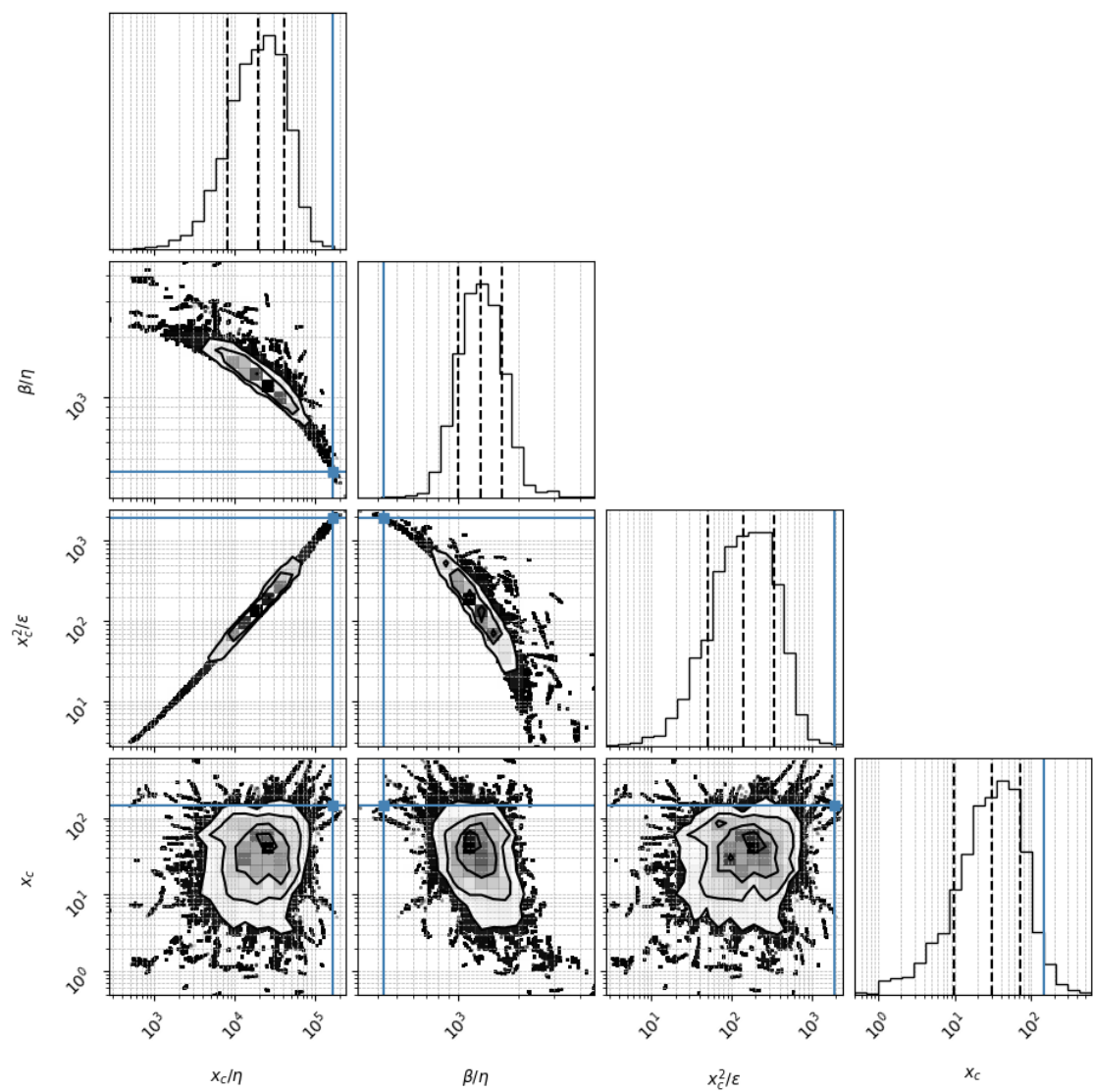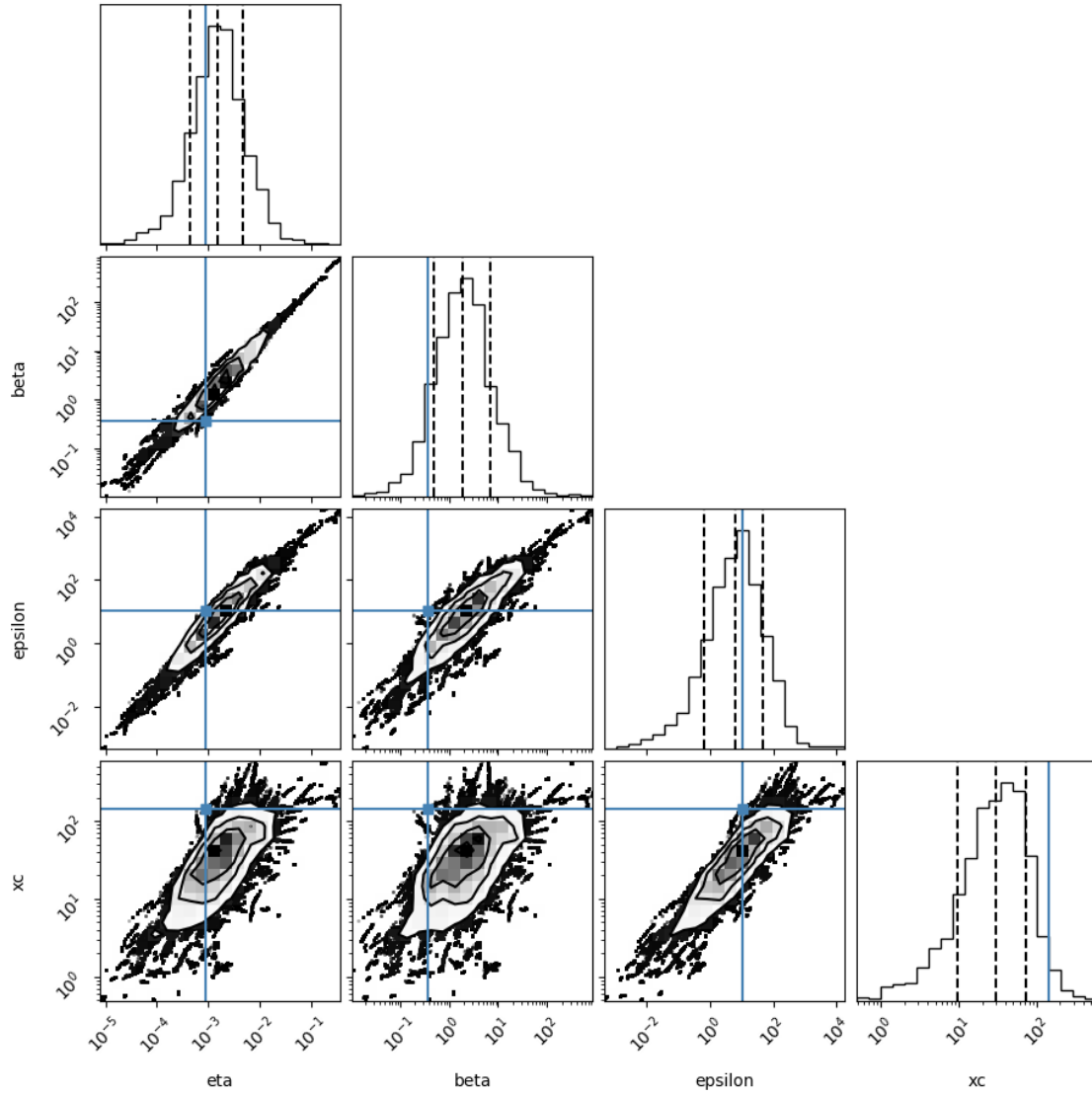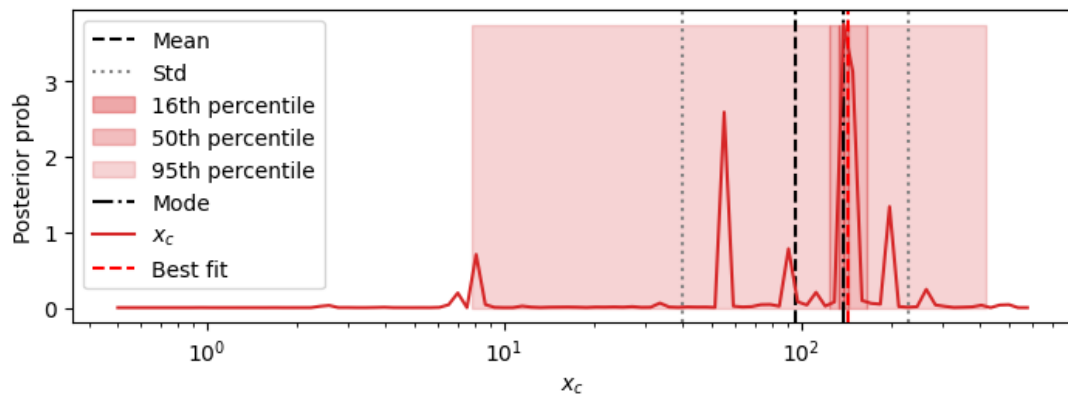
2 2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability
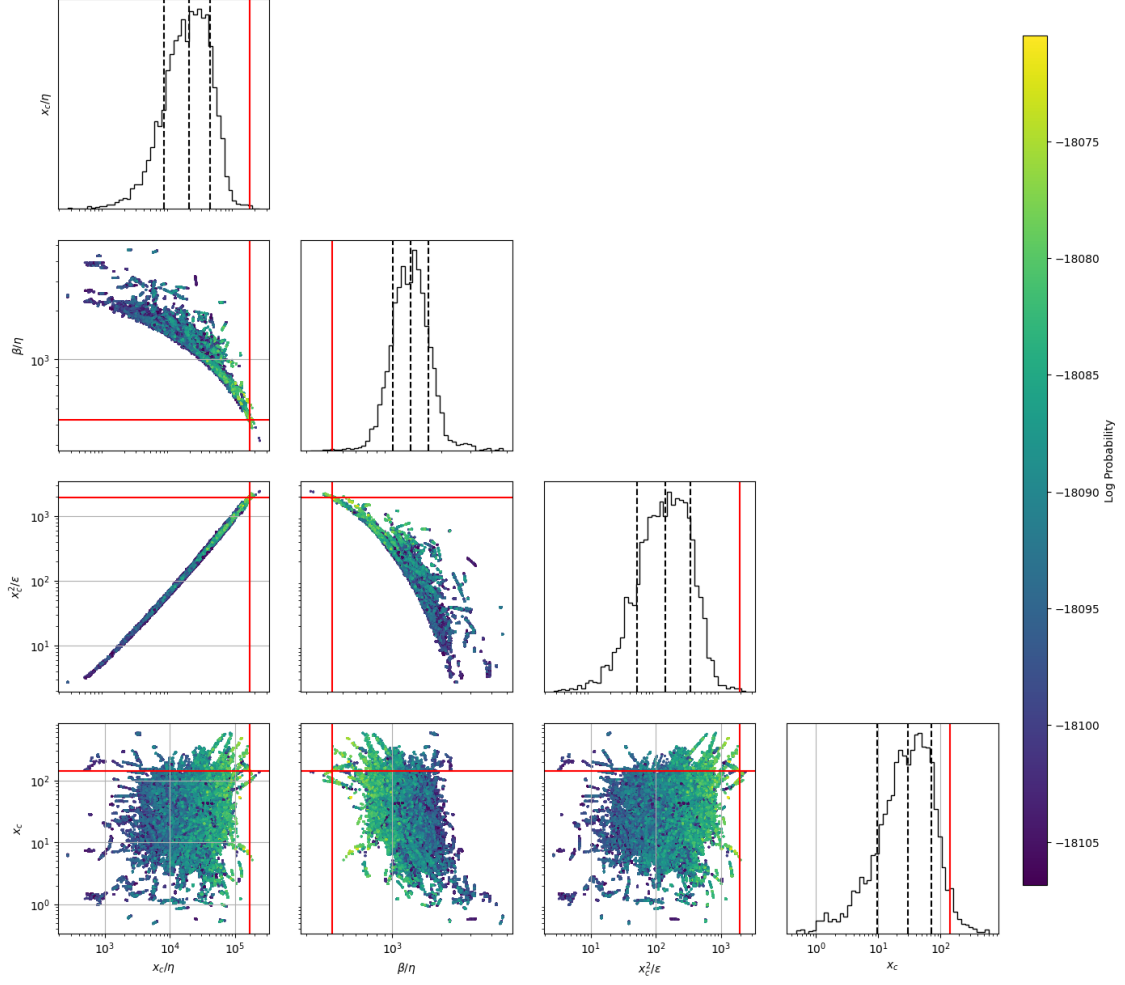
3 3. Posterior distributions of parameters

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

5
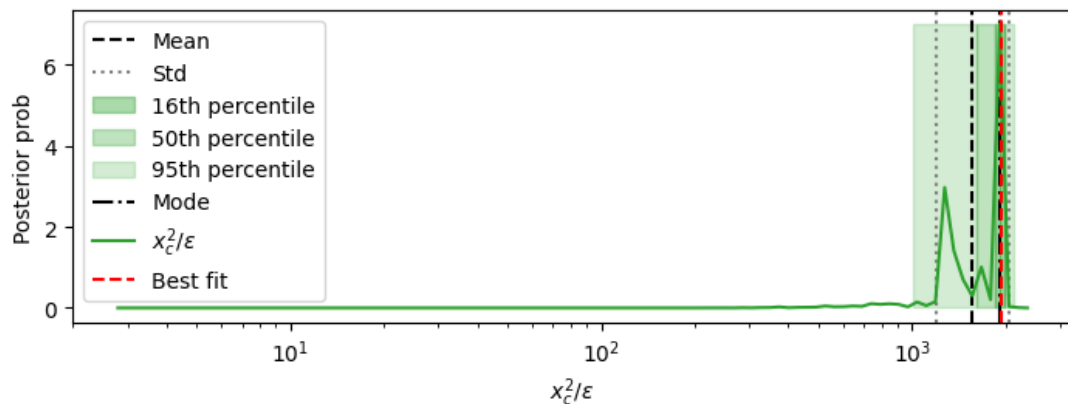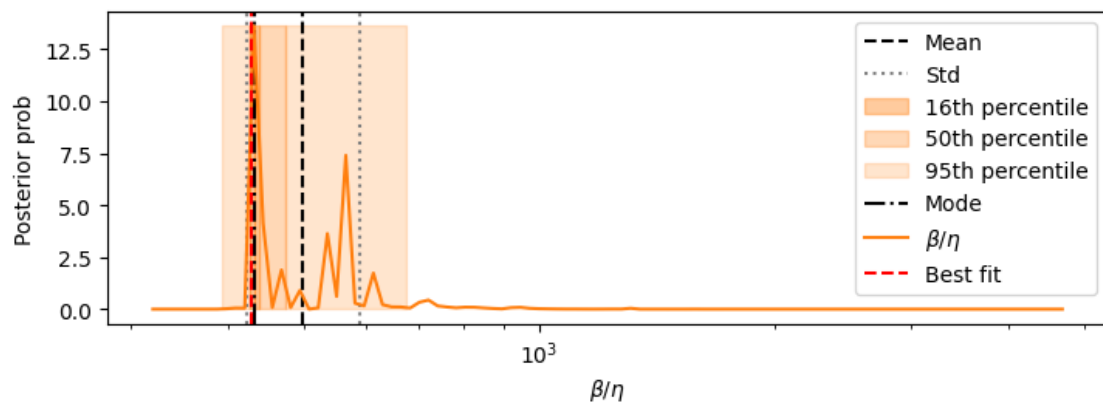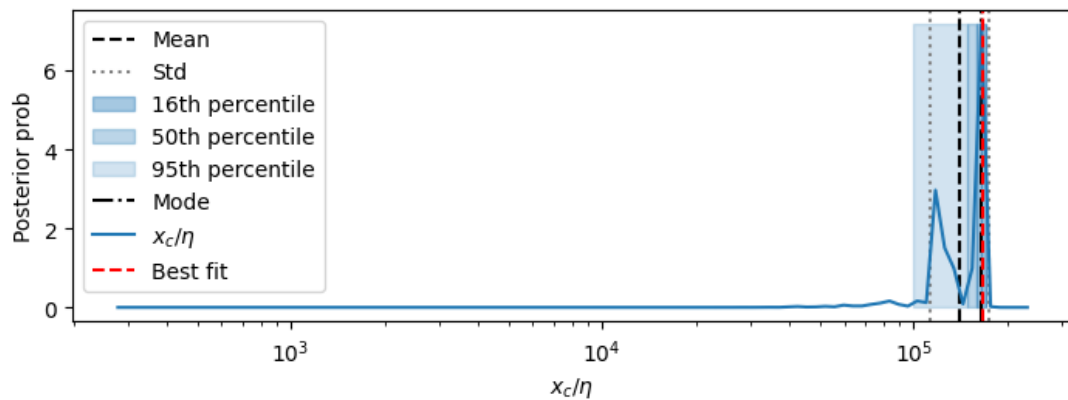
2D marginalizations of posterior distributions

2D Marginalized Posterior
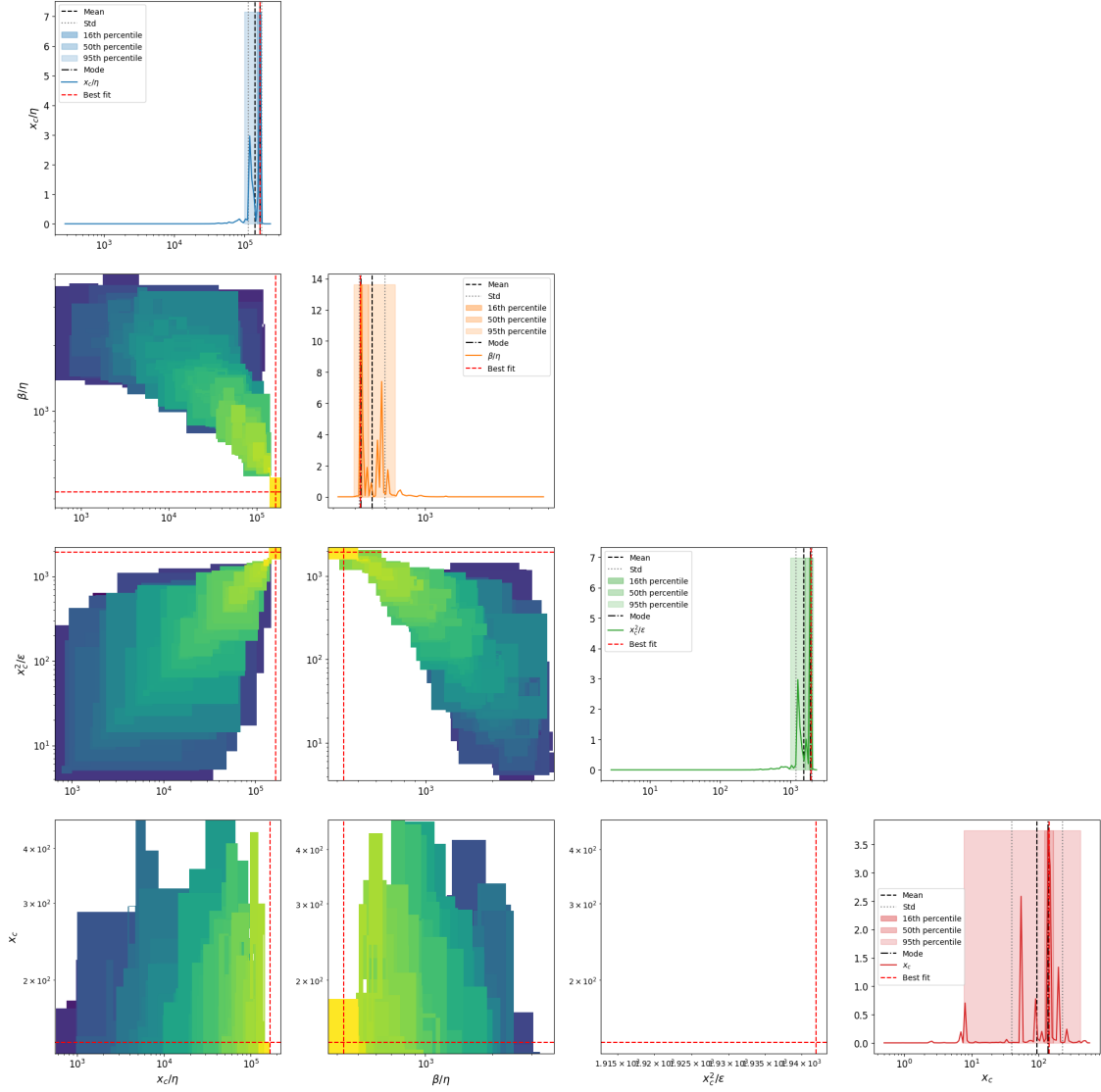
4   4. Table of results

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	134740.077	[47277.235, 34997.431]	130528.905

beta/eta	505.796	[114.24, 93.192]	441.384
xc^2/epsilon	1505.683	[690.187, 473.254]	1440.765
xc	97.991	[140.227, 57.683]	140.572
eta	0.000747	[0.000829, 0.000393]	0.000982
beta	0.363	[0.375, 0.184]	0.379
epsilon	7.372	[26.705, 5.777]	10.988
sqrt(xc/eta)	377.721	[55.849, 48.655]	369.566
s= eta^0.5*xc^1.5/epsilon	4.219	[0.954, 0.778]	4.391
beta*xc/epsilon	5.373	[0.724, 0.638]	6.073
eta*xc/epsilon	0.011	[0.000895, 0.000827]	0.0114
Fx=beta^2/eta*xc	1.828	[2.019, 0.959]	2.458
Dx =beta*epsilon/eta*xc^2	0.334	[0.277, 0.151]	0.265
Pk=beta*k/epsilon	0.0233	[0.0285, 0.0128]	0.0171
Fk=beta^2/eta*k	343.813	[303.589, 161.226]	328.745
Dk =beta*epsilon/eta*k^2	12626.476	[52622.696, 10183.106]	19877.958
Fk^2/Dk=beta^3/eta*epsilon	11.554	[15.589, 6.636]	15.649
epsilon/beta^2	52.195	[37.9, 21.957]	39.469
k/beta	1.376	[1.537, 0.726]	1.422
k^2/epsilon	0.0367	[0.143, 0.0292]	0.0227
best fit_MedianLifetime	747.75	0.51	747.75
best fit_MaxLifetime	1500.0	0	1500.0
data_MedianLifetime	770.0	0.52	770.0
data_MaxLifetime	1338.0	0	1338.0

	percentile_16 \
xc/eta	[127605.117, 139708.395]
beta/eta	[429.59, 453.502]
xc^2/epsilon	[1346.039, 1542.157]
xc	[130.912, 158.28]
eta	[0.000882, 0.00102]
beta	[0.338, 0.424]
epsilon	[9.225, 13.089]
sqrt(xc/eta)	[365.403, 382.34]
s= eta^0.5*xc^1.5/epsilon	[4.234, 4.554]
beta*xc/epsilon	[5.845, 6.214]
eta*xc/epsilon	[0.0113, 0.0116]
Fx=beta^2/eta*xc	[2.04, 2.75]
Dx =beta*epsilon/eta*xc^2	[0.257, 0.309]
Pk=beta*k/epsilon	[0.0157, 0.0198]
Fk=beta^2/eta*k	[290.107, 342.736]
Dk =beta*epsilon/eta*k^2	[16718.563, 23634.401]
Fk^2/Dk=beta^3/eta*epsilon	[13.702, 17.874]
epsilon/beta^2	[35.399, 44.006]
k/beta	[1.27, 1.592]
k^2/epsilon	[0.0214, 0.0271]
best fit_MedianLifetime	[747.26, 748.26]
best fit_MaxLifetime	[1500.0, 1500.0]

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data_MedianLifetime              [769.52, 770.52]
data_MaxLifetime                 [1338.0, 1338.0]


                                            percentile_50              percentile_95  \
xc/eta                         [111387.504, 152959.662]   [49277.283, 167467.805]
beta/eta                           [414.353, 573.487]       [414.353, 917.089]
xc^2/epsilon                      [1229.354, 1688.532]      [453.408, 1934.552]
xc                                  [85.404, 165.973]        [14.068, 338.229]
eta                               [0.000764, 0.00136]      [0.000225, 0.00399]
beta                                 [0.291, 0.718]          [0.127, 3.232]
epsilon                              [7.305, 20.87]         [0.352, 151.587]
sqrt(xc/eta)                       [333.748, 391.101]      [217.013, 409.228]
s= eta^0.5*xc^1.5/epsilon             [3.75, 4.78]           [1.995, 5.268]
beta*xc/epsilon                      [5.668, 6.917]          [5.015, 8.061]
eta*xc/epsilon                     [0.0107, 0.0117]        [0.00847, 0.0118]
Fx=beta^2/eta*xc                     [1.209, 2.963]          [1.122, 20.673]
Dx =beta*epsilon/eta*xc^2            [0.242, 0.473]          [0.214, 2.442]
Pk=beta*k/epsilon                  [0.0148, 0.0315]        [0.00783, 0.403]
Fk=beta^2/eta*k                    [225.921, 478.367]      [191.23, 3253.644]
Dk =beta*epsilon/eta*k^2        [13272.982, 42084.356]  [1320.274, 376972.625]
Fk^2/Dk=beta^3/eta*epsilon           [9.613, 25.476]        [5.17, 137.168]
epsilon/beta^2                      [30.618, 58.822]         [8.92, 78.626]
k/beta                               [0.872, 1.851]          [0.18, 2.696]
k^2/epsilon                        [0.0151, 0.0384]        [0.00165, 0.445]
best fit_MedianLifetime            [747.26, 748.26]        [747.26, 748.26]
best fit_MaxLifetime               [1500.0, 1500.0]        [1500.0, 1500.0]
data_MedianLifetime                [769.52, 770.52]        [769.52, 770.52]
data_MaxLifetime                   [1338.0, 1338.0]        [1338.0, 1338.0]


                              max_likelihood mode_overall
xc/eta                           166402.798   166402.798
beta/eta                            428.49       428.49
xc^2/epsilon                       1941.984     1941.984
xc                                 143.817      143.817
eta                               0.000864     0.000864
beta                                 0.37         0.37
epsilon                             10.651       10.651
sqrt(xc/eta)                       407.925      407.925
s= eta^0.5*xc^1.5/epsilon            4.761        4.761
beta*xc/epsilon                      5.001        5.001
eta*xc/epsilon                      0.0117       0.0117
Fx=beta^2/eta*xc                     1.103        1.103
Dx =beta*epsilon/eta*xc^2            0.221        0.221
Pk=beta*k/epsilon                   0.0174       0.0174
Fk=beta^2/eta*k                    317.365      317.365
Dk =beta*epsilon/eta*k^2          18254.642    18254.642
Fk^2/Dk=beta^3/eta*epsilon           5.518        5.518
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epsilon/beta^2             77.66       77.66
k/beta                      1.35        1.35
k^2/epsilon               0.0235      0.0235
best fit_MedianLifetime   747.75         NaN
best fit_MaxLifetime      1500.0         NaN
data_MedianLifetime        770.0         NaN
data_MaxLifetime          1338.0         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