Jack_Russell_vetCompass_post.csv_run_24_20250525_220157

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/DOGS/Jack_Russell_vetCompass_post.csv
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Reading Jack_Russell
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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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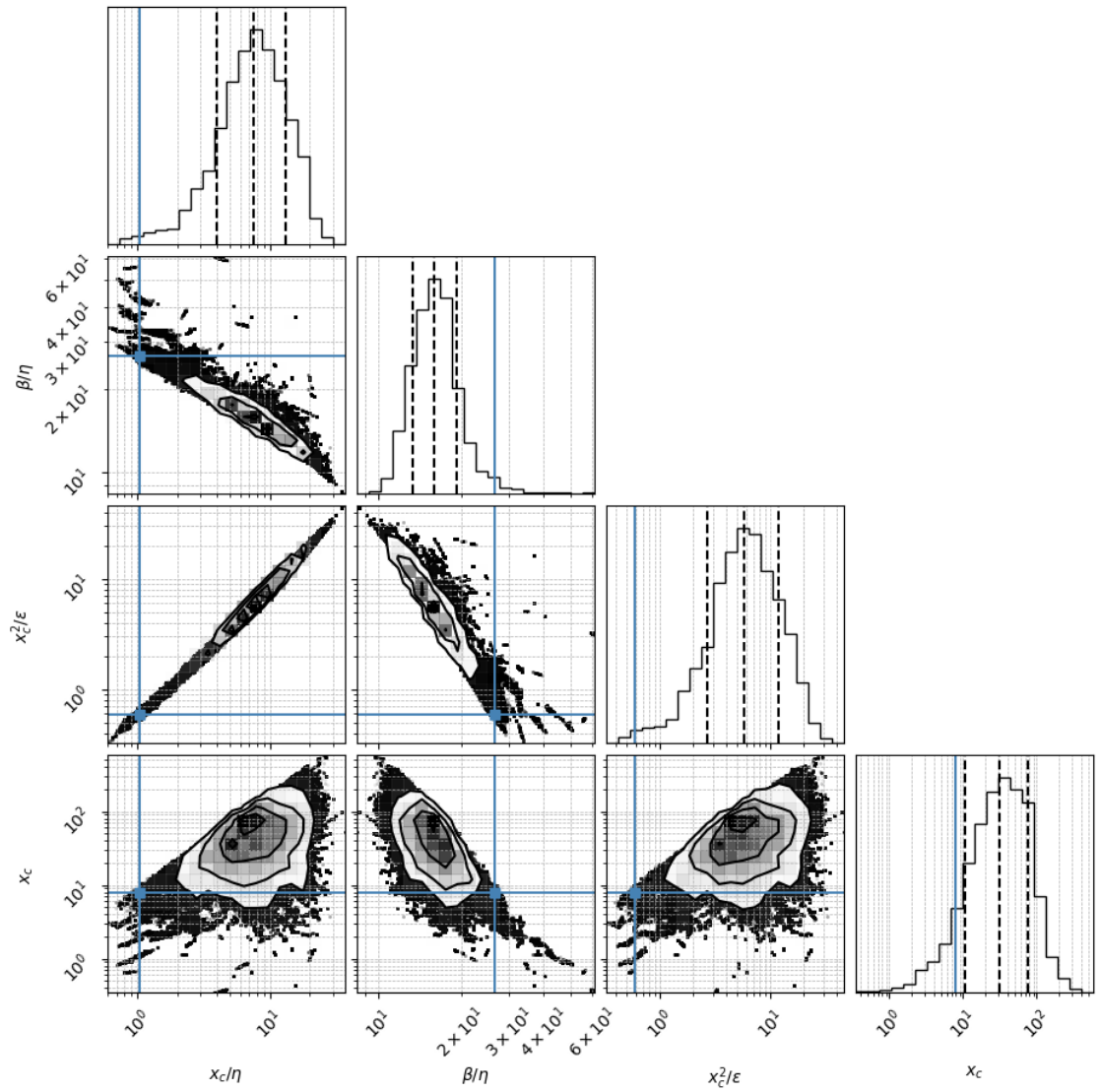
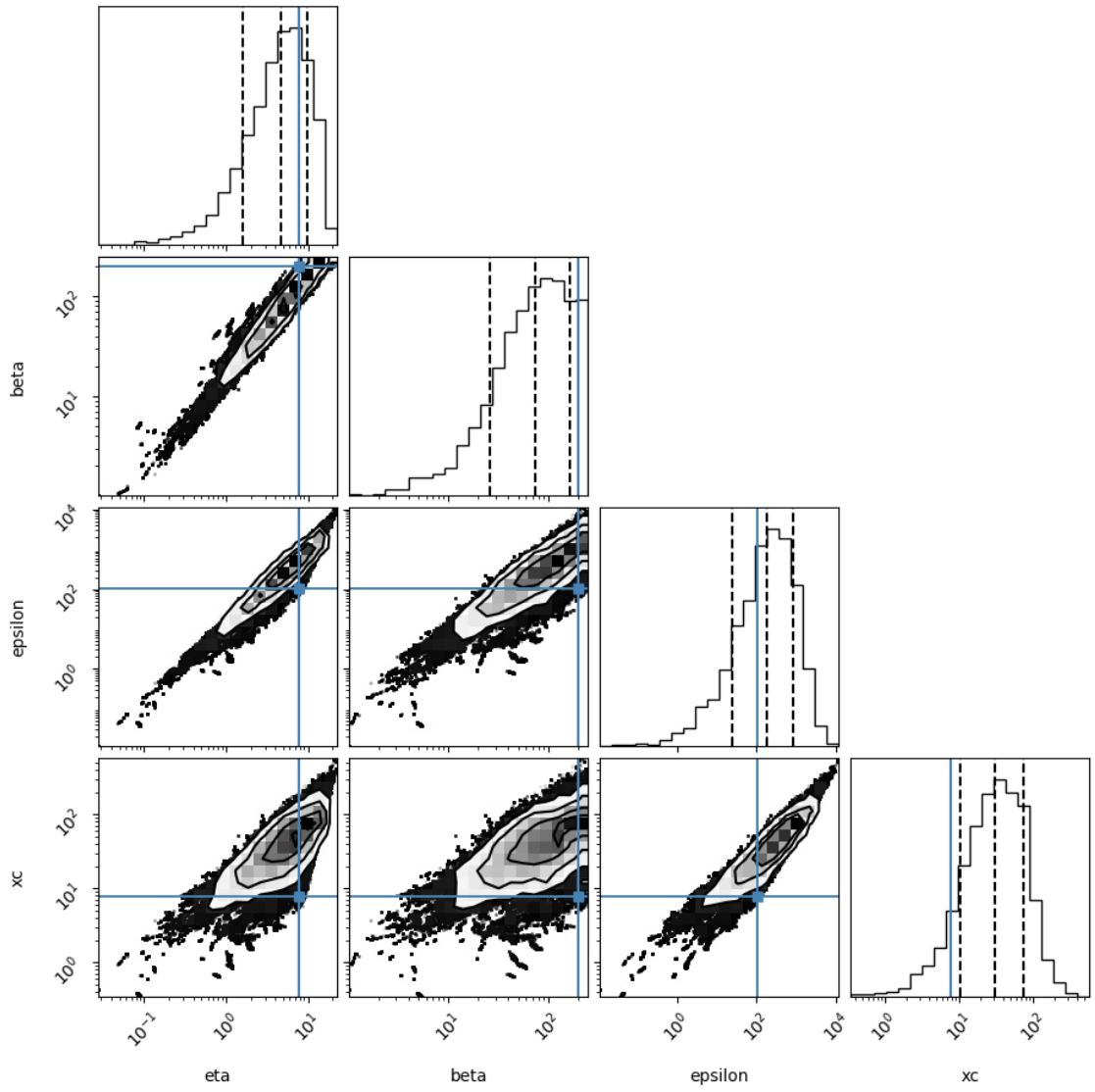
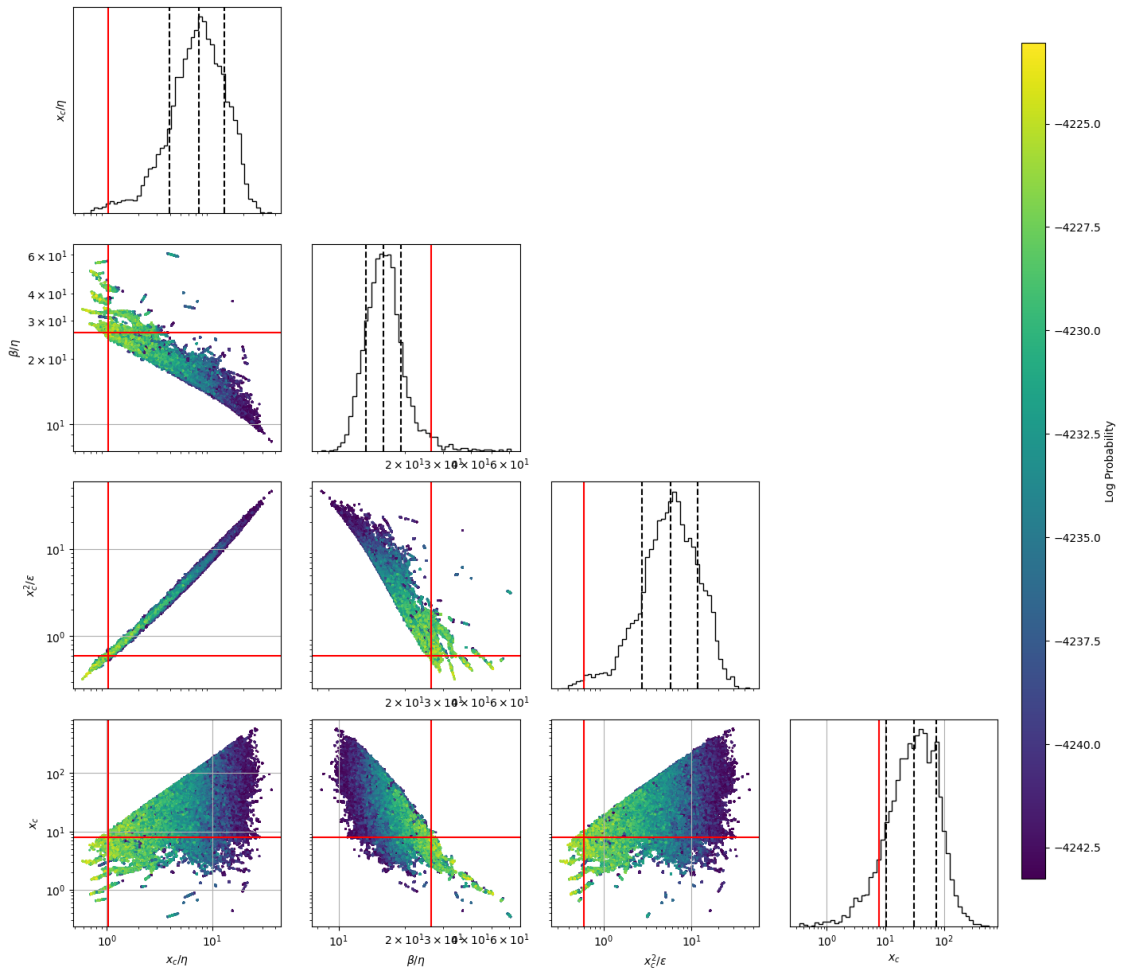

x_c/η
β/η
x_c^2/ε
x_c



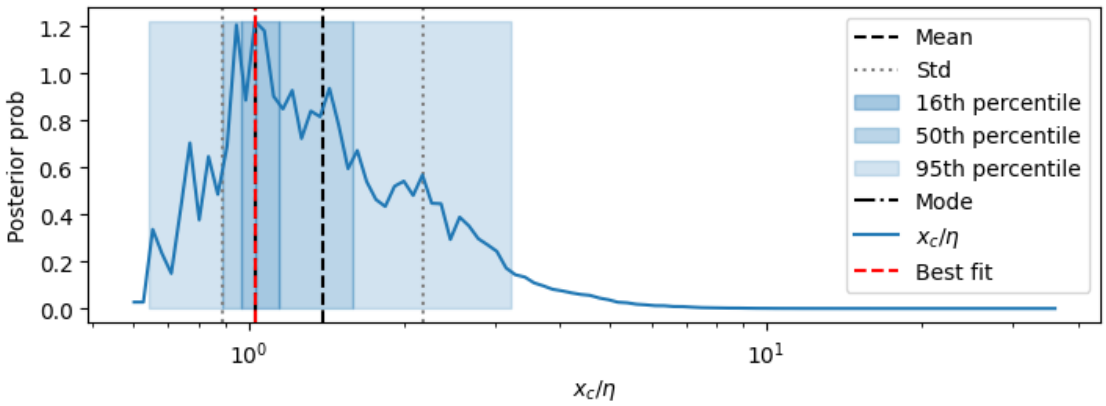
2 2. Heat map corner plot of raw samples

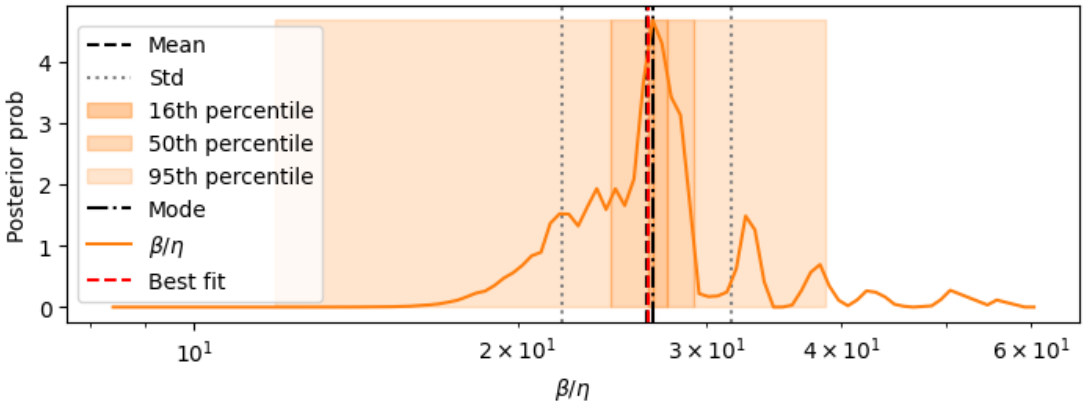
This plot shows all the raw sample points and their lnprobability

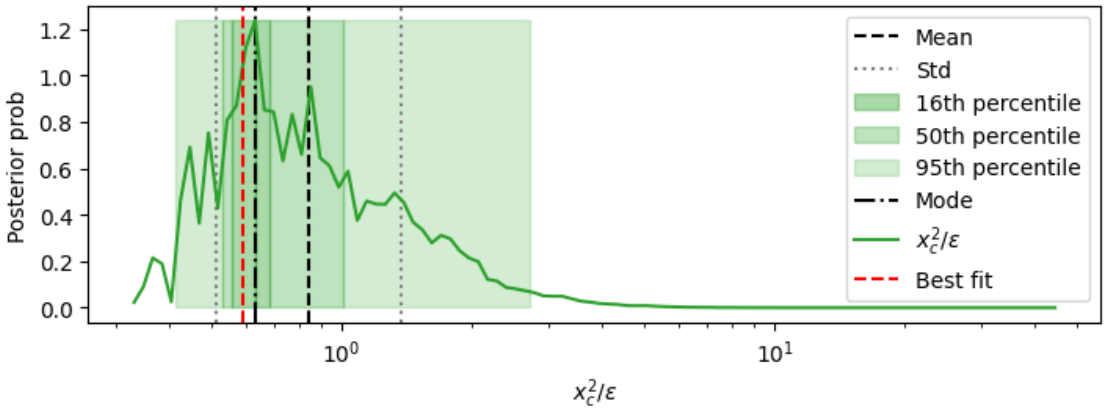


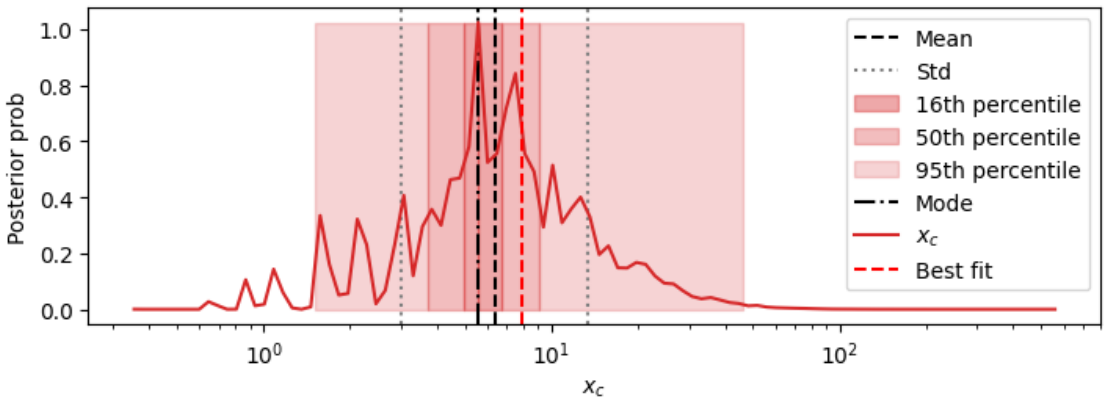
3 3. Posterior distributions of parameters

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

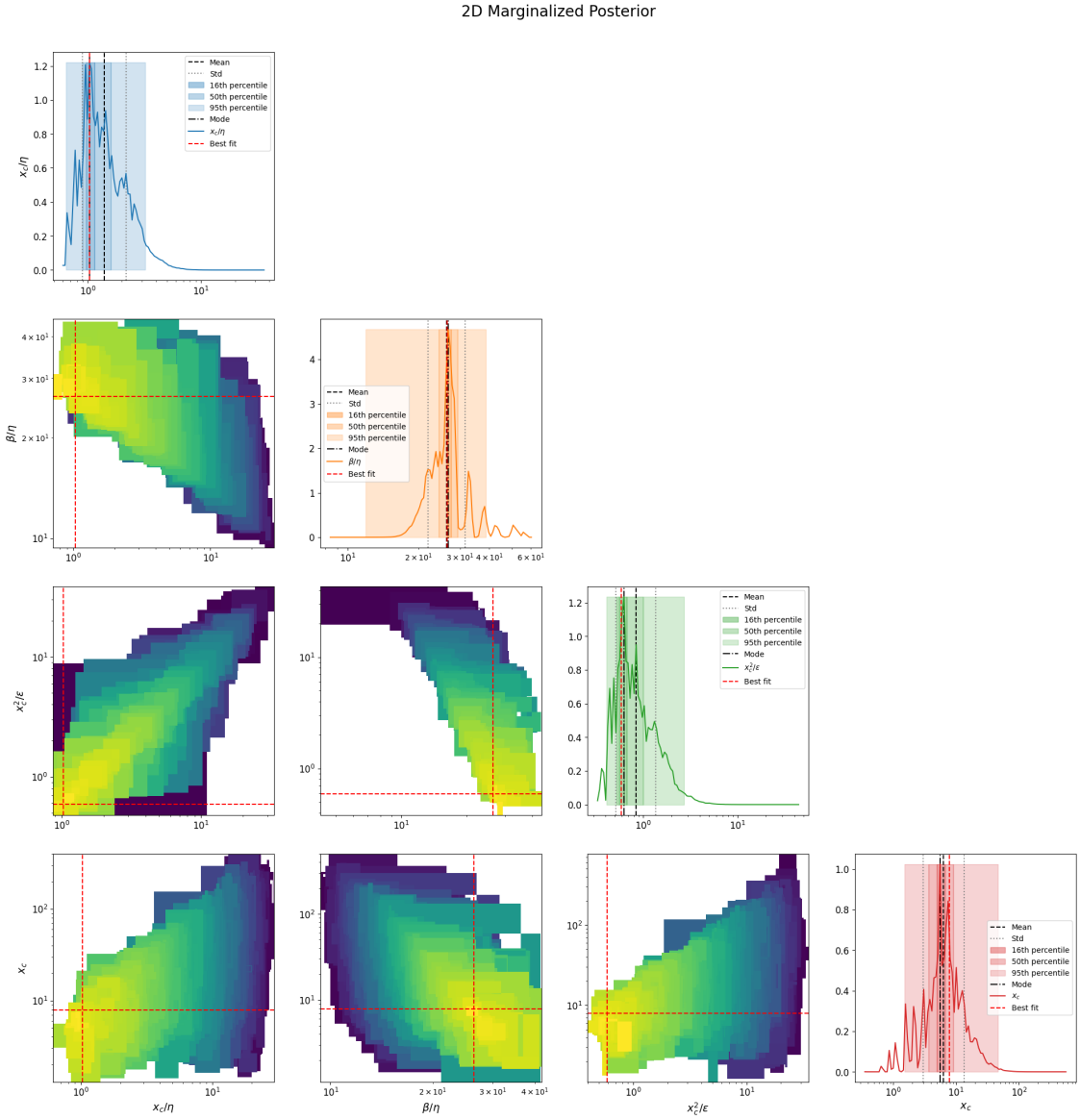

Posterior prob
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit
x_c/η


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


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


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

2D marginalizations of posterior distributions



`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	1.391	[0.778, 0.499]	1.073	
beta/eta	26.366	[5.264, 4.388]	26.703	
xc^2/epsilon	0.841	[0.534, 0.326]	0.63	
xc	6.345	[7.059, 3.341]	6.462	
eta	4.414	[3.653, 1.999]	7.501	
beta	118.565	[83.145, 48.873]	196.168	
epsilon	42.555	[104.146, 30.211]	85.005	
sqrt(xc/eta)	1.204	[0.321, 0.254]	1.015	
s= eta^0.5*xc^1.5/epsilon	0.731	[0.244, 0.183]	0.604	
beta*xc/epsilon	15.876	[2.952, 2.489]	15.561	
eta*xc/epsilon	0.609	[0.0377, 0.0355]	0.6	
Fx=beta^2/eta*xc	454.558	[597.421, 258.144]	645.397	
Dx =beta*epsilon/eta*xc^2	28.696	[29.1, 14.448]	41.064	
Pk=beta*k/epsilon	1.258	[1.713, 0.725]	1.25	
Fk=beta^2/eta*k	6336.095	[4170.971, 2515.228]	9728.479	
Dk =beta*epsilon/eta*k^2	4872.532	[10556.762, 3333.799]	10082.104	
Fk^2/Dk=beta^3/eta*epsilon	8182.532	[11419.616, 4766.895]	10350.148	
beta^2/epsilon	337.358	[354.25, 172.799]	404.001	
k/beta	0.0043	[0.00305, 0.00179]	0.00241	
k/epsilon	0.0124	[0.0315, 0.00892]	0.00588	
best fit_MedianLifetime	13.89	0.51	13.89	
best fit_MaxLifetime	20.0	0	20.0	
data_MedianLifetime	13.54	0.53	13.54	
data_MaxLifetime	21.34	0	21.34	

	percentile_16	\
xc/eta	[0.967, 1.142]	
beta/eta	[26.438, 27.512]	
xc^2/epsilon	[0.585, 0.713]	
xc	[5.78, 7.224]	
eta	[6.782, 8.296]	
beta	[180.604, 225.146]	
epsilon	[69.105, 104.564]	
sqrt(xc/eta)	[0.984, 1.091]	
s= eta^0.5*xc^1.5/epsilon	[0.578, 0.649]	
beta*xc/epsilon	[15.189, 15.943]	
eta*xc/epsilon	[0.592, 0.609]	
Fx=beta^2/eta*xc	[533.413, 723.578]	
Dx =beta*epsilon/eta*xc^2	[34.922, 45.257]	
Pk=beta*k/epsilon	[1.093, 1.43]	
Fk=beta^2/eta*k	[8403.438, 10621.79]	
Dk =beta*epsilon/eta*k^2	[8358.6, 12160.987]	
Fk^2/Dk=beta^3/eta*epsilon	[9056.657, 11828.377]	
beta^2/epsilon	[363.688, 481.361]	
k/beta	[0.0021, 0.00262]	
k/epsilon	[0.00478, 0.00723]	

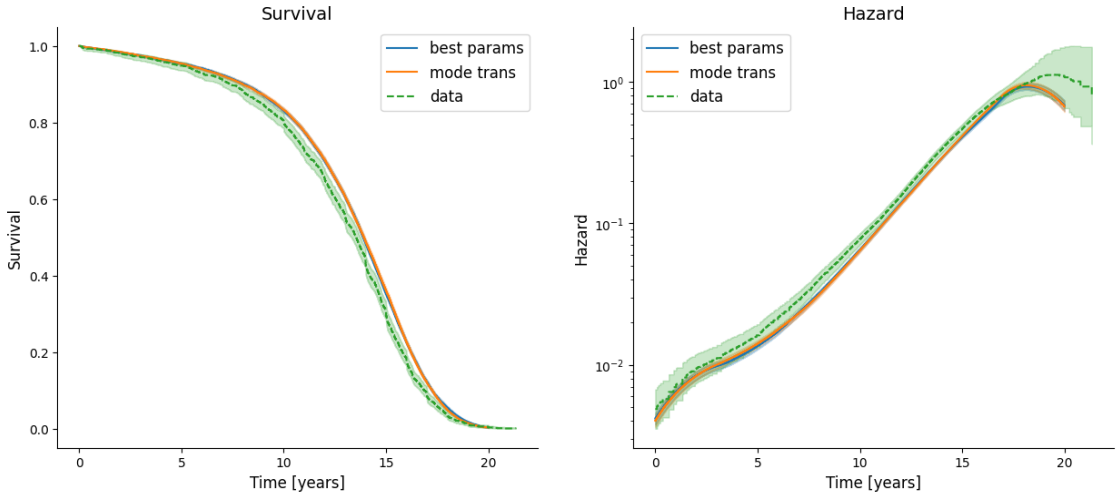
```
best fit_MedianLifetime                                    [13.4, 14.4]
best fit_MaxLifetime                                       [20.0, 20.0]
data_MedianLifetime         [13.059999999999999, 14.069999999999999]
data_MaxLifetime                                        [21.34, 21.34]

                                                         percentile_50  \
xc/eta                                                   [0.891, 1.589]
beta/eta                                                [23.932, 28.066]
xc^2/epsilon                                               [0.504, 0.96]
xc                                                       [4.293, 9.727]
eta                                                      [4.239, 8.872]
beta                                                  [129.755, 251.381]
epsilon                                                [26.292, 120.043]
sqrt(xc/eta)                                             [0.944, 1.287]
s= eta^0.5*xc^1.5/epsilon                                 [0.53, 0.771]
beta*xc/epsilon                                         [14.01, 16.466]
eta*xc/epsilon                                             [0.576, 0.62]
Fx=beta^2/eta*xc                                      [312.843, 842.745]
Dx =beta*epsilon/eta*xc^2                               [20.793, 54.971]
Pk=beta*k/epsilon                                          [0.764, 1.87]
Fk=beta^2/eta*k                                     [5577.13, 11262.451]
Dk =beta*epsilon/eta*k^2                            [3484.854, 13779.937]
Fk^2/Dk=beta^3/eta*epsilon                          [5309.497, 14132.858]
beta^2/epsilon                                         [238.844, 553.786]
k/beta                                                 [0.00199, 0.00407]
k/epsilon                                                [0.00416, 0.019]
best fit_MedianLifetime                                      [13.4, 14.4]
best fit_MaxLifetime                                         [20.0, 20.0]
data_MedianLifetime         [13.059999999999999, 14.069999999999999]
data_MaxLifetime                                        [21.34, 21.34]

                                                         percentile_95  \
xc/eta                                                   [0.667, 3.348]
beta/eta                                                [17.752, 33.575]
xc^2/epsilon                                               [0.375, 2.34]
xc                                                       [1.895, 27.548]
eta                                                      [1.266, 10.852]
beta                                                  [43.097, 251.381]
epsilon                                                [4.369, 362.234]
sqrt(xc/eta)                                             [0.816, 1.907]
s= eta^0.5*xc^1.5/epsilon                                [0.459, 1.333]
beta*xc/epsilon                                         [12.312, 22.023]
eta*xc/epsilon                                             [0.549, 0.687]
Fx=beta^2/eta*xc                                      [79.329, 1949.194]
Dx =beta*epsilon/eta*xc^2                                [6.909, 105.102]
Pk=beta*k/epsilon                                          [0.239, 5.469]
Fk=beta^2/eta*k                                     [2316.771, 14235.529]
```

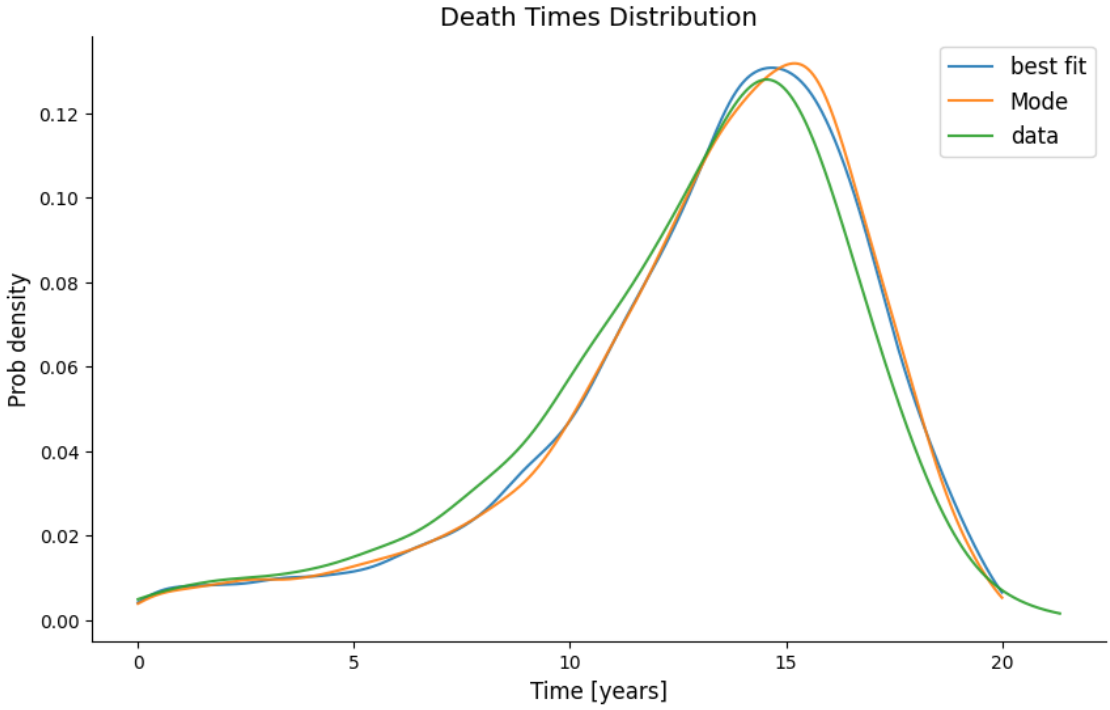
Dk =beta*epsilon/eta*k^2	[534.574, 33051.884]
Fk^2/Dk=beta^3/eta*epsilon	[1278.247, 44948.108]
beta^2/epsilon	[77.83, 1197.111]
k/beta	[0.00199, 0.0116]
k/epsilon	[0.00138, 0.114]
best fit_MedianLifetime	[13.4, 14.4]
best fit_MaxLifetime	[20.0, 20.0]
data_MedianLifetime	[13.059999999999999, 14.069999999999999]
data_MaxLifetime	[21.34, 21.34]

	max_likelihood	mode_overall
xc/eta	1.034	0.858
beta/eta	26.419	27.462
xc^2/epsilon	0.591	0.488
xc	7.905	6.873
eta	7.647	7.647
beta	202.021	202.021
epsilon	105.766	105.766
sqrt(xc/eta)	1.017	0.983
s= eta^0.5*xc^1.5/epsilon	0.581	0.581
beta*xc/epsilon	15.098	15.68
eta*xc/epsilon	0.571	0.591
Fx=beta^2/eta*xc	675.196	728.998
Dx =beta*epsilon/eta*xc^2	44.72	46.492
Pk=beta*k/epsilon	0.955	1.421
Fk=beta^2/eta*k	10674.356	12167.363
Dk =beta*epsilon/eta*k^2	11176.942	8560.388
Fk^2/Dk=beta^3/eta*epsilon	10194.369	17294.16
beta^2/epsilon	385.873	605.839
k/beta	0.00247	0.00235
k/epsilon	0.00473	0.00667
best fit_MedianLifetime	13.89	NaN
best fit_MaxLifetime	20.0	NaN
data_MedianLifetime	13.54	NaN
data_MaxLifetime	21.34	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


Survival
best params
mode trans
data
Survival
Time [years]
Hazard
best params
mode trans
data
Hazard
Time [years]


Death Times Distribution
best fit
Mode
data
Prob density
Time [years]