German_Shepherd_vetCompass_post.csv_run_25_20250525_220625

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/German_Shepherd_vetCompass_post.csv
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Reading German_Shepherd
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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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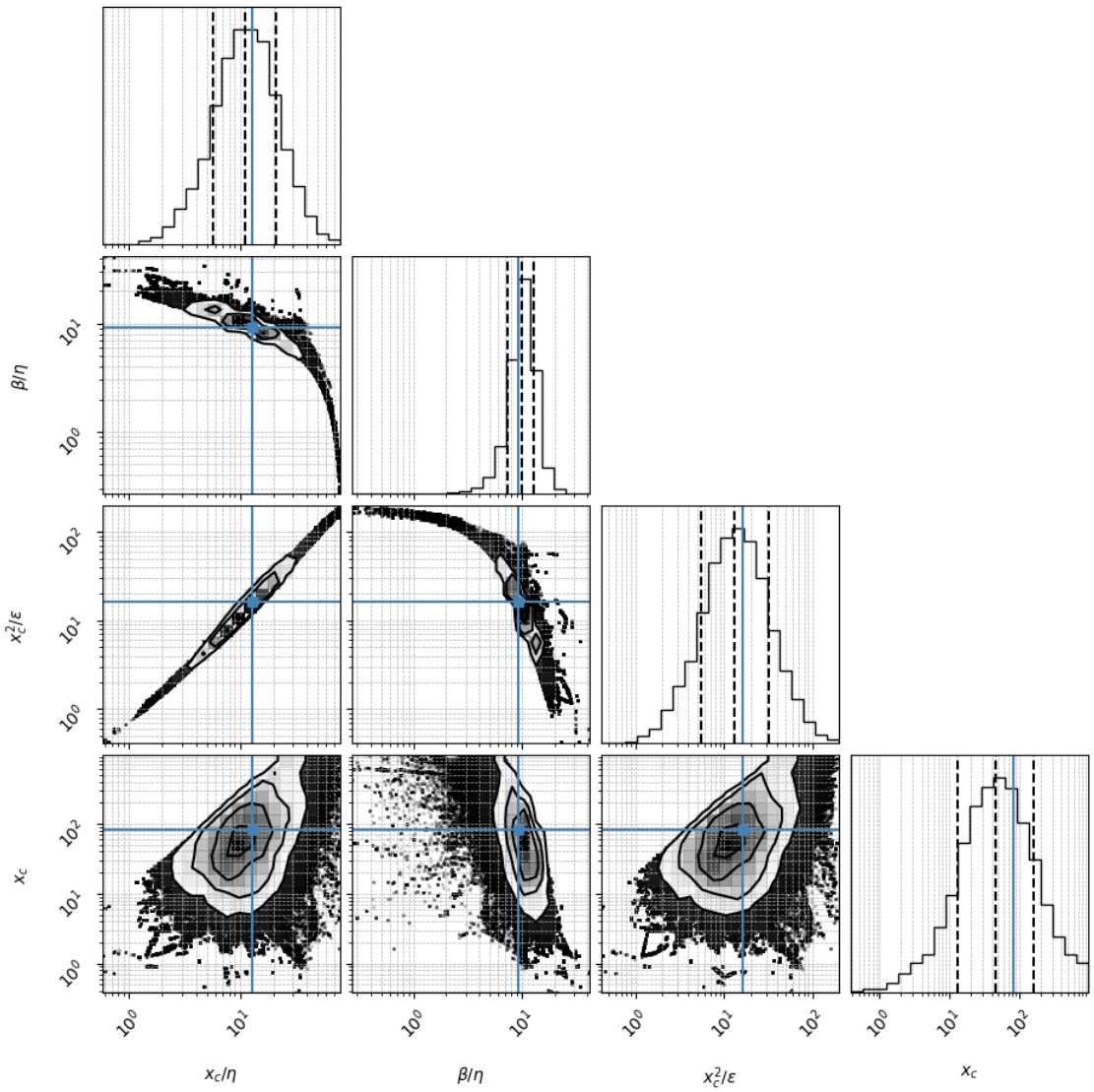
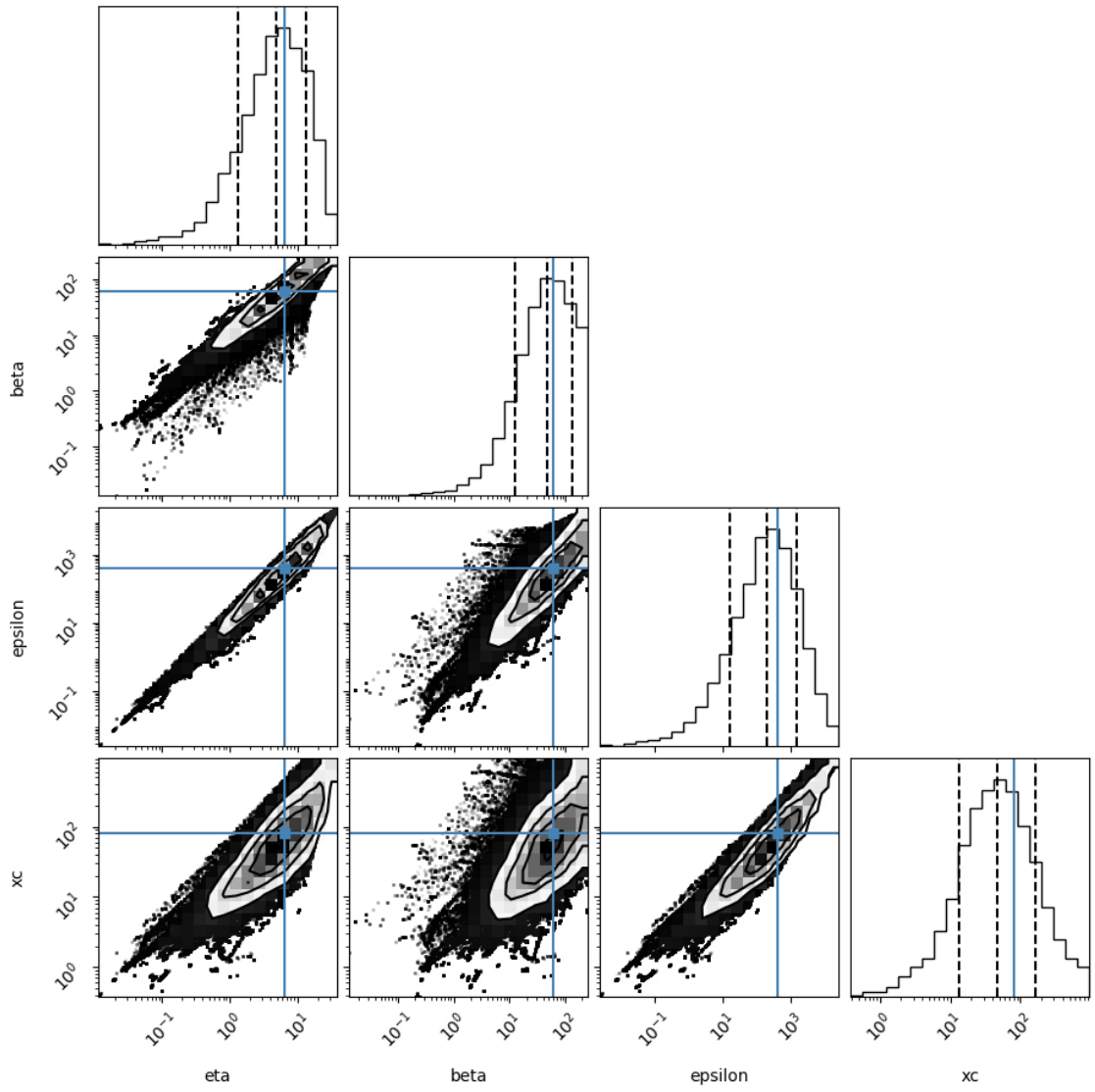
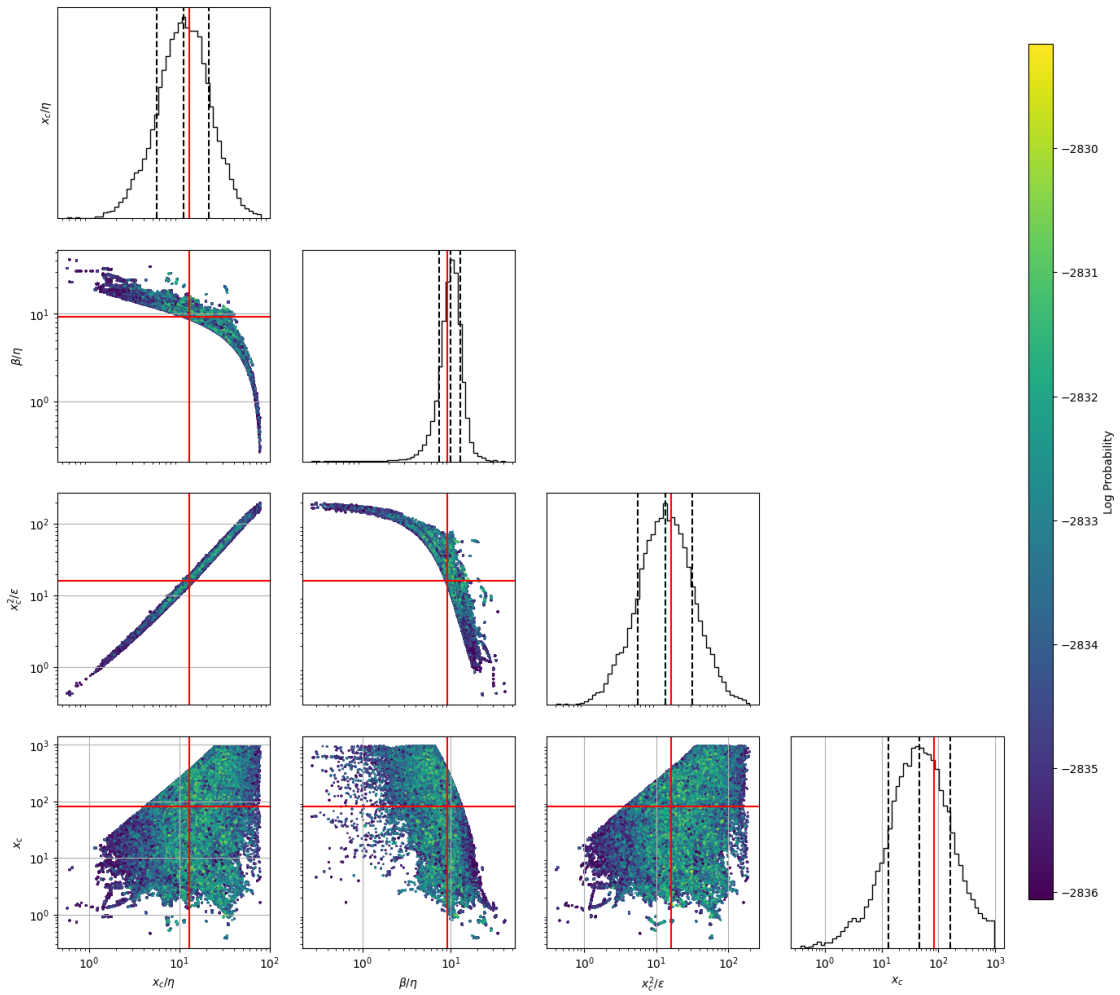

x_c/η
β/η
x_c^2/ε
x_c



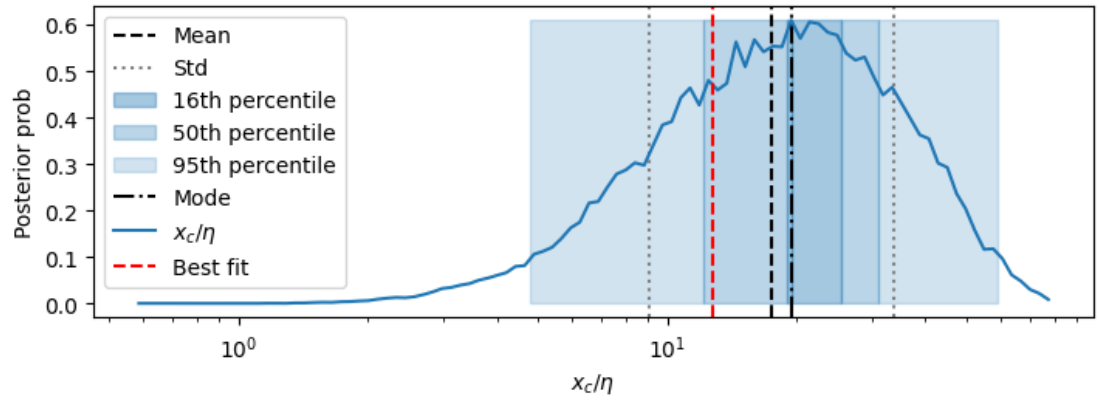
2 2. Heat map corner plot of raw samples

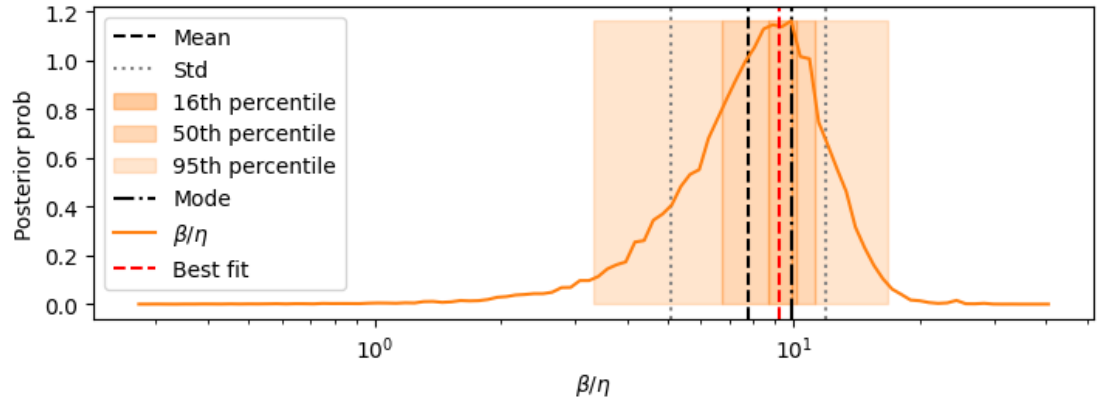
This plot shows all the raw sample points and their lnprobability

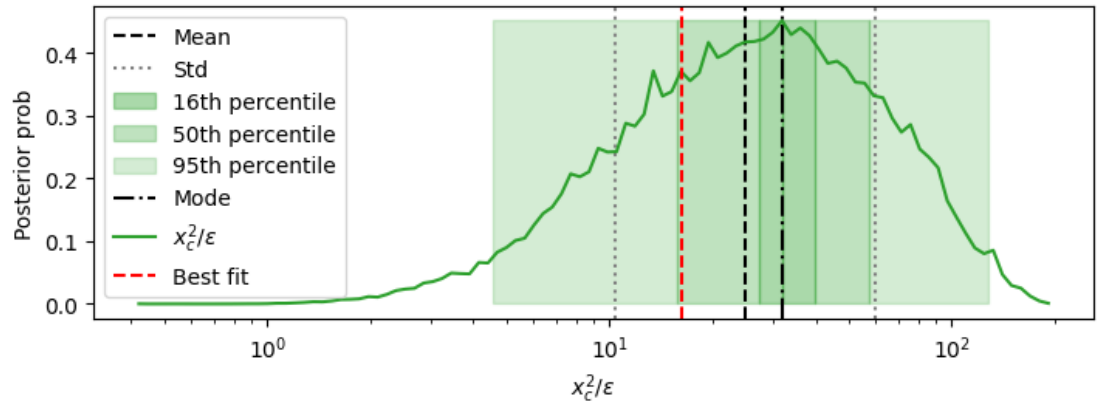


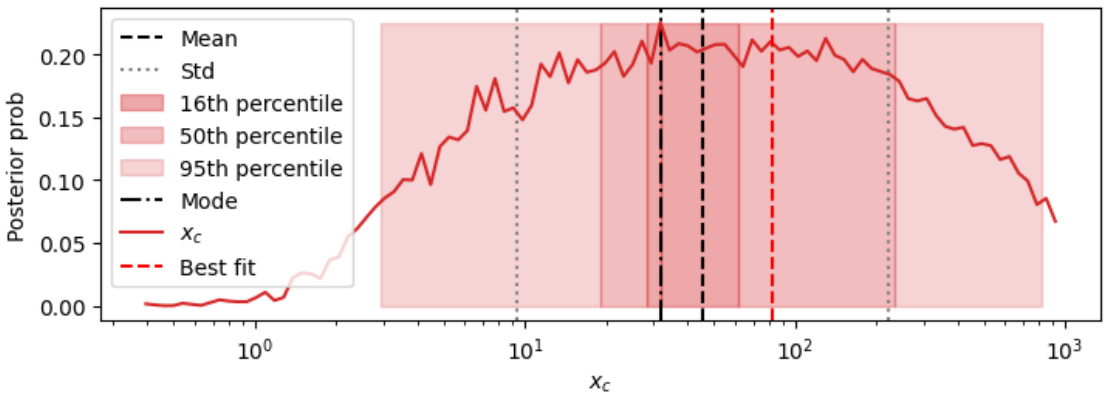
3 3. Posterior distributions of parameters

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

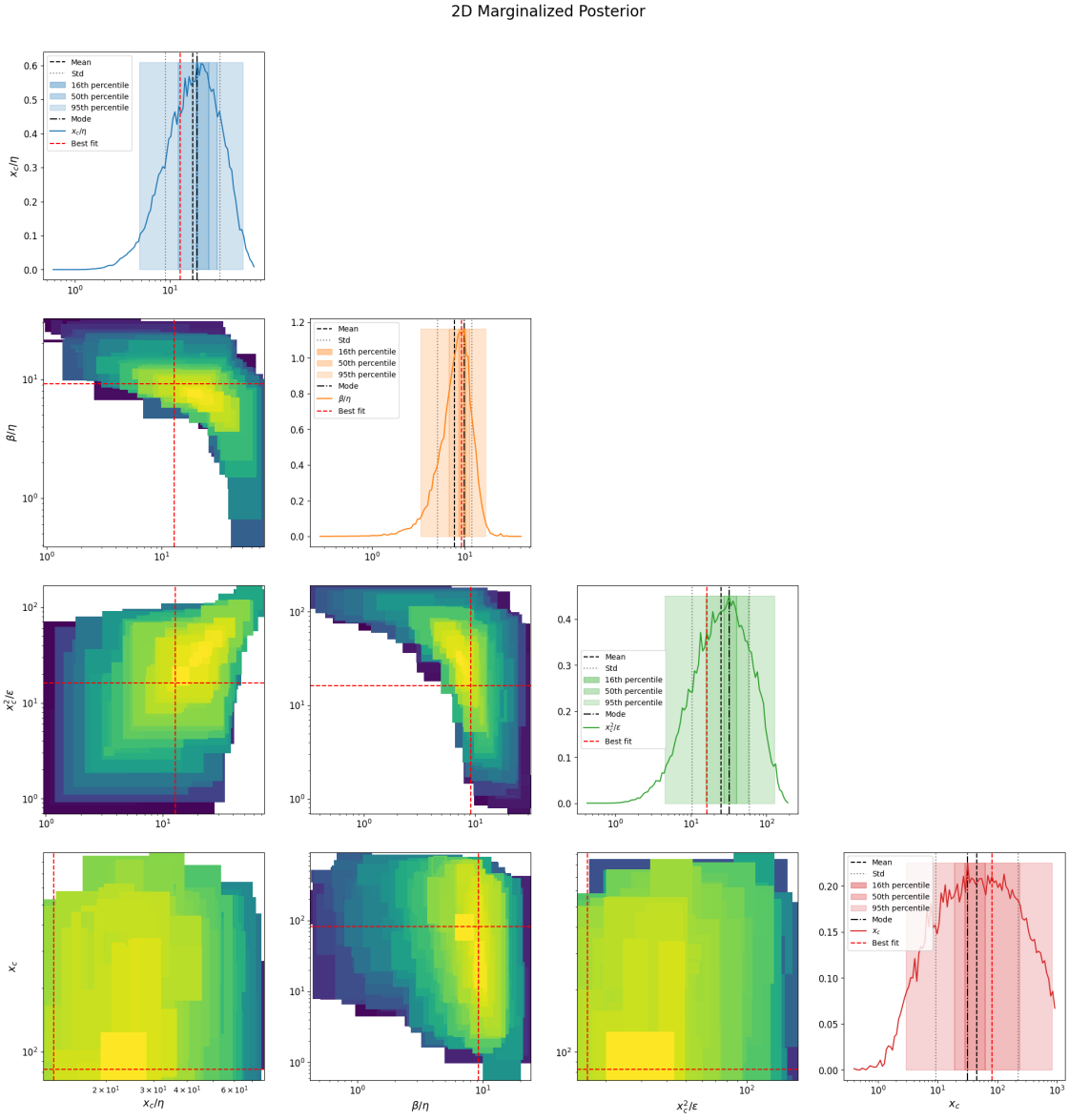

Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit
Posterior prob
x_c/η


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

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Rescaling the samples TIME by 365
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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	17.443	[16.241, 8.41]	21.45	
beta/eta	7.789	[4.104, 2.688]	8.905	
xc^2/epsilon	24.936	[34.762, 14.52]	31.889	
xc	45.557	[176.89, 36.227]	34.344	
eta	2.202	[8.527, 1.75]	2.988	
beta	17.024	[65.533, 13.513]	22.61	
epsilon	59.479	[1346.824, 56.963]	184.432	
sqrt(xc/eta)	4.13	[1.493, 1.097]	4.408	
s= eta^0.5*xc^1.5/epsilon	5.836	[3.907, 2.34]	6.104	
beta*xc/epsilon	11.169	[2.715, 2.184]	11.601	
eta*xc/epsilon	1.408	[0.32, 0.261]	1.411	
Fx=beta^2/eta*xc	3.725	[10.169, 2.726]	4.274	
Dx =beta*epsilon/eta*xc^2	0.333	[0.724, 0.228]	0.342	
Pk=beta*k/epsilon	0.121	[0.665, 0.102]	0.0584	
Fk=beta^2/eta*k	239.582	[1055.626, 195.265]	242.291	
Dk =beta*epsilon/eta*k^2	1983.838	[40063.022, 1890.238]	11504.045	
Fk^2/Dk=beta^3/eta*epsilon	29.679	[155.659, 24.926]	50.593	
beta^2/epsilon	4.513	[12.587, 3.322]	5.875	
k/beta	0.0284	[0.107, 0.0224]	0.0269	
k/epsilon	0.00726	[0.162, 0.00695]	0.00103	
best fit_MedianLifetime	11.19	0.51	11.19	
best fit_MaxLifetime	18.29	0	18.29	
data_MedianLifetime	10.73	0.53	10.73	
data_MaxLifetime	19.0	0	19.0	

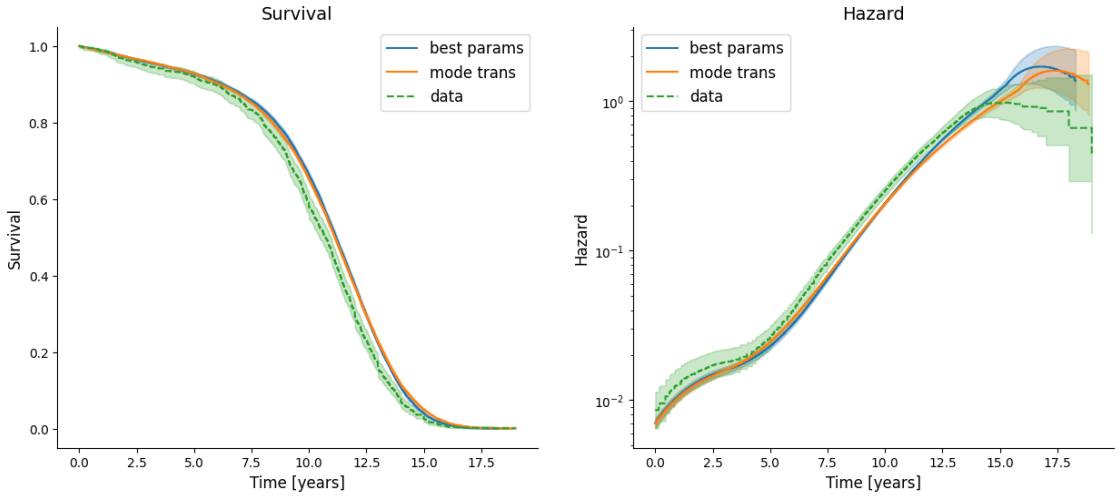
	percentile_16	percentile_50	\
xc/eta	[18.048, 24.266]	[12.777, 32.626]	
beta/eta	[8.255, 9.605]	[6.745, 11.176]	
xc^2/epsilon	[25.687, 37.216]	[15.668, 53.92]	
xc	[28.237, 61.793]	[15.091, 184.976]	
eta	[2.645, 5.961]	[1.624, 17.147]	
beta	[16.028, 35.191]	[6.616, 77.265]	
epsilon	[123.262, 617.82]	[20.931, 2635.673]	
sqrt(xc/eta)	[4.044, 4.689]	[3.487, 5.437]	
s= eta^0.5*xc^1.5/epsilon	[5.558, 6.96]	[4.276, 9.048]	
beta*xc/epsilon	[10.874, 11.854]	[10.415, 12.922]	
eta*xc/epsilon	[1.346, 1.479]	[1.225, 1.647]	
Fx=beta^2/eta*xc	[2.941, 5.348]	[1.617, 9.726]	
Dx =beta*epsilon/eta*xc^2	[0.259, 0.451]	[0.149, 0.784]	
Pk=beta*k/epsilon	[0.049, 0.124]	[0.0193, 0.354]	
Fk=beta^2/eta*k	[149.126, 342.687]	[85.636, 1039.179]	
Dk =beta*epsilon/eta*k^2	[6442.806, 28608.676]	[748.013, 77288.144]	
Fk^2/Dk=beta^3/eta*epsilon	[31.527, 67.194]	[12.243, 143.213]	
beta^2/epsilon	[4.153, 7.235]	[2.383, 12.606]	
k/beta	[0.0142, 0.0312]	[0.00586, 0.062]	
k/epsilon	[0.000424, 0.00213]	[0.000117, 0.0147]	

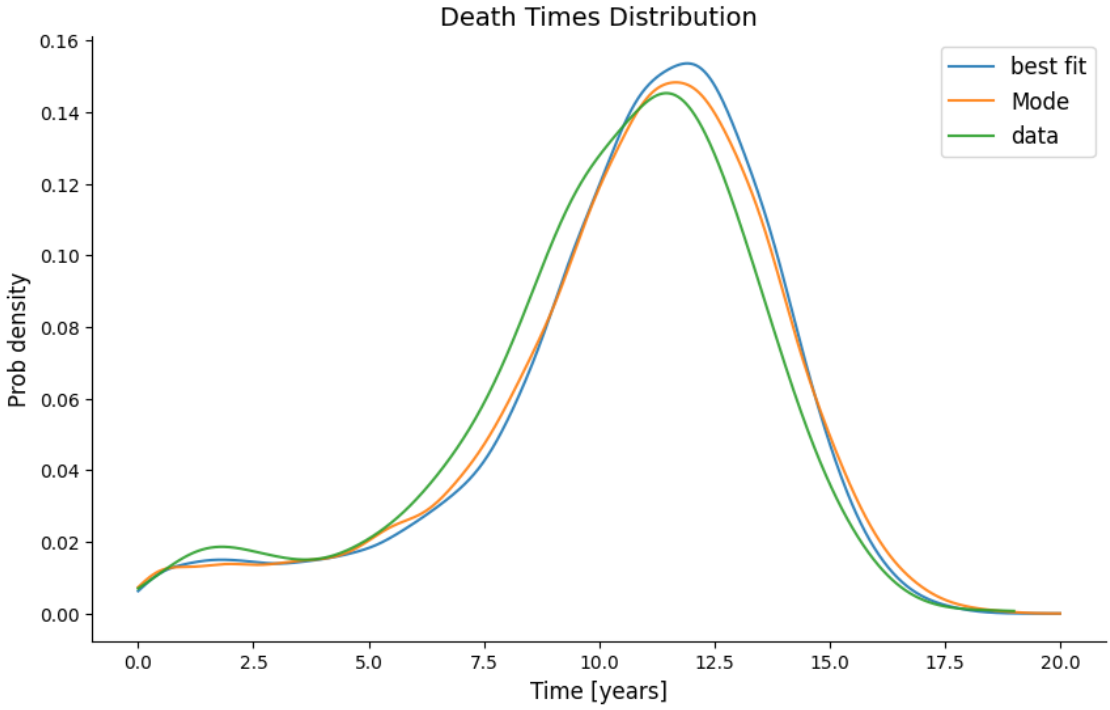
best fit_MedianLifetime	[10.7, 11.7]	[10.7, 11.7]
best fit_MaxLifetime	[18.29, 18.29]	[18.29, 18.29]
data_MedianLifetime	[10.26, 11.26]	[10.26, 11.26]
data_MaxLifetime	[19.0, 19.0]	[19.0, 19.0]

	percentile_95	max_likelihood	mode_overall
xc/eta	[4.763, 58.979]	12.778	23.219
beta/eta	[3.163, 15.915]	9.206	7.114
xc^2/epsilon	[4.553, 120.403]	16.188	32.674
xc	[2.914, 819.125]	82.303	90.948
eta	[0.111, 30.288]	6.441	0.48
beta	[1.022, 251.376]	59.295	4.504
epsilon	[0.195, 13210.652]	418.446	2.867
sqrt(xc/eta)	[2.237, 7.31]	3.575	3.8
s= eta^0.5*xc^1.5/epsilon	[2.178, 15.292]	4.528	5.262
beta*xc/epsilon	[6.766, 17.477]	11.663	14.123
eta*xc/epsilon	[0.962, 2.071]	1.267	1.385
Fx=beta^2/eta*xc	[0.269, 50.37]	6.633	7.205
Dx =beta*epsilon/eta*xc^2	[0.0354, 3.306]	0.569	0.51
Pk=beta*k/epsilon	[0.00479, 4.073]	0.0709	0.068
Fk=beta^2/eta*k	[10.698, 4776.997]	1091.783	295.401
Dk =beta*epsilon/eta*k^2	[7.239, 343190.739]	15409.378	5.998
Fk^2/Dk=beta^3/eta*epsilon	[0.717, 949.742]	77.355	309.593
beta^2/epsilon	[0.259, 58.034]	8.402	8.265
k/beta	[0.00199, 0.443]	0.00843	0.00646
k/epsilon	[3.78e-05, 2.178]	0.00119	0.000689
best fit_MedianLifetime	[10.7, 11.7]	11.19	NaN
best fit_MaxLifetime	[18.29, 18.29]	18.29	NaN
data_MedianLifetime	[10.26, 11.26]	10.73	NaN
data_MaxLifetime	[19.0, 19.0]	19.0	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


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]