Labradors_vetCompass_post.csv_run_23_20250525_215758

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/Labradors_vetCompass_post.csv
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Reading Labrador_vetCompass
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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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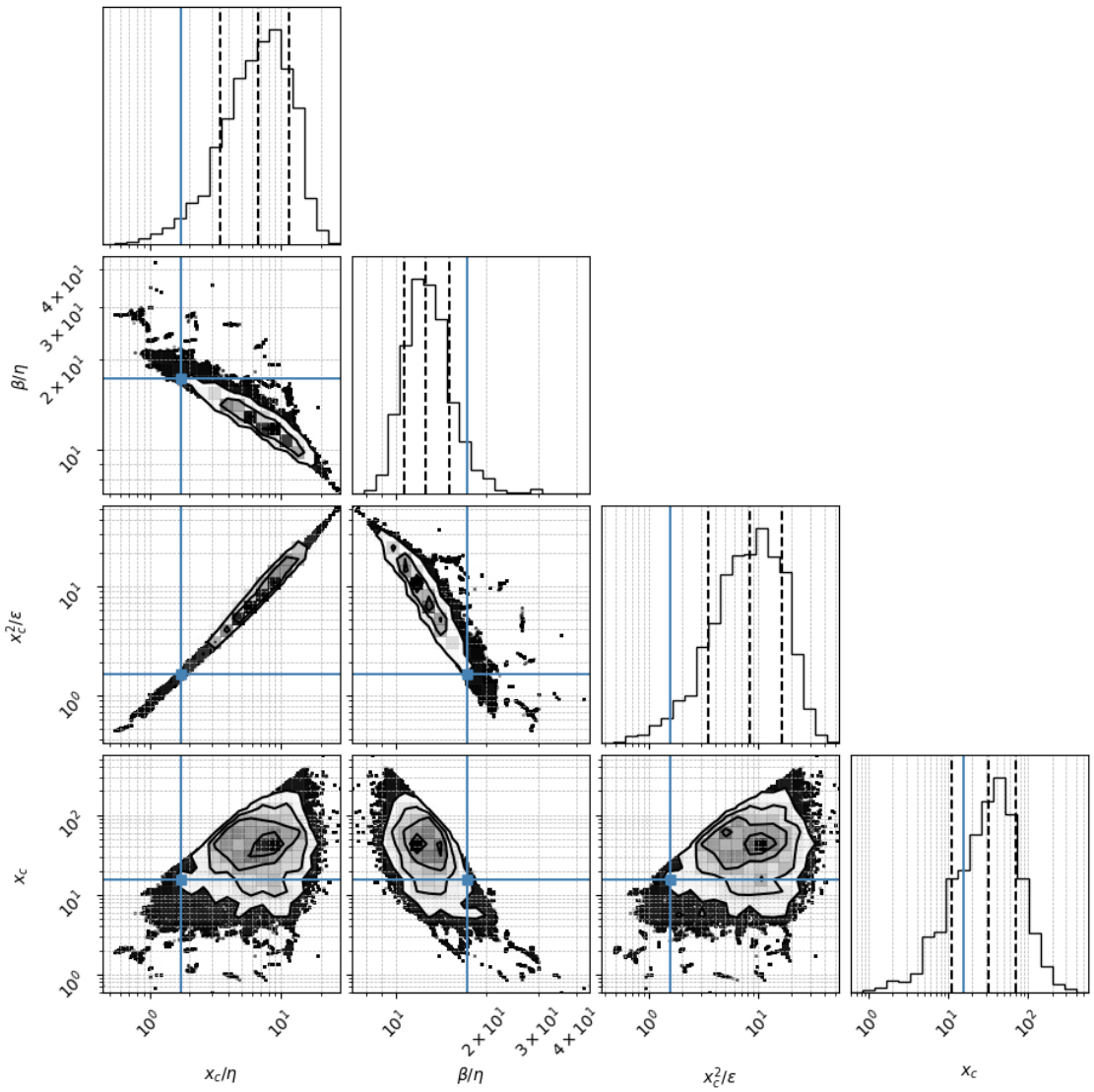
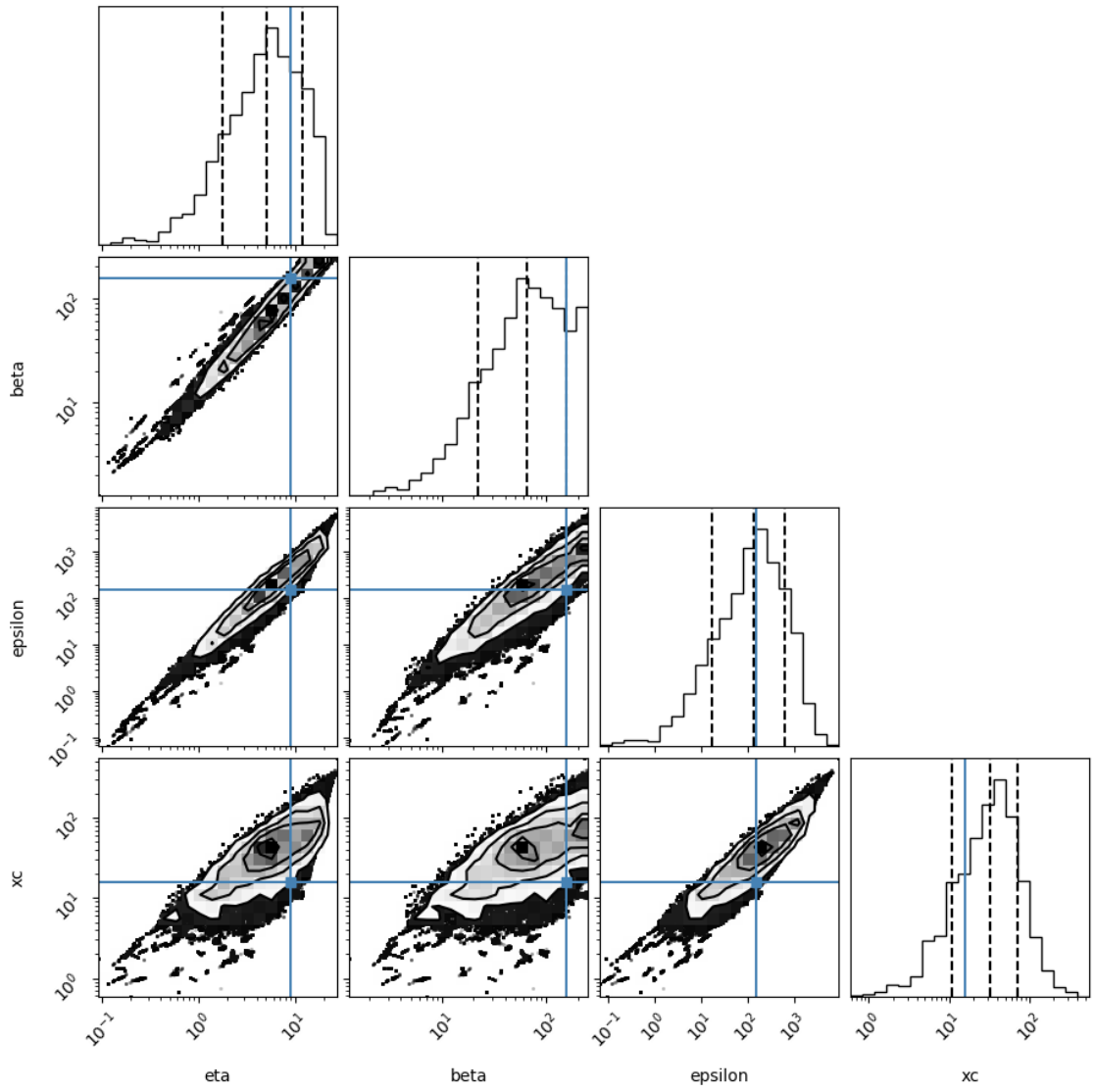
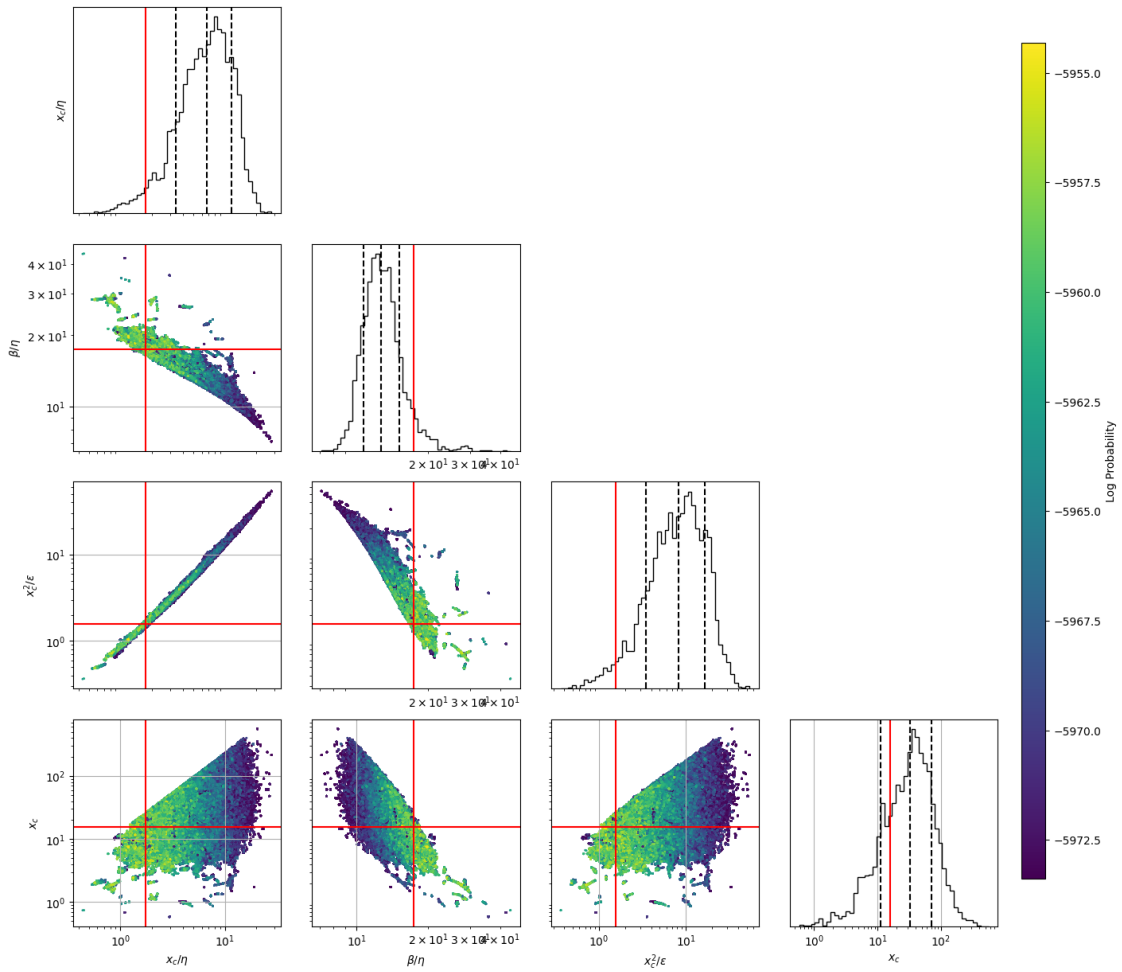

x_c/η
β/η
x_c^2/ε
x_c



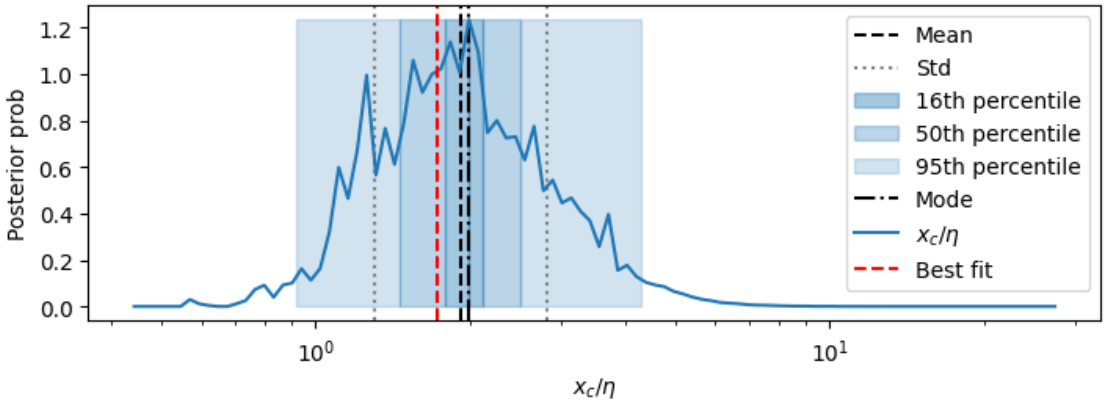
2 2. Heat map corner plot of raw samples

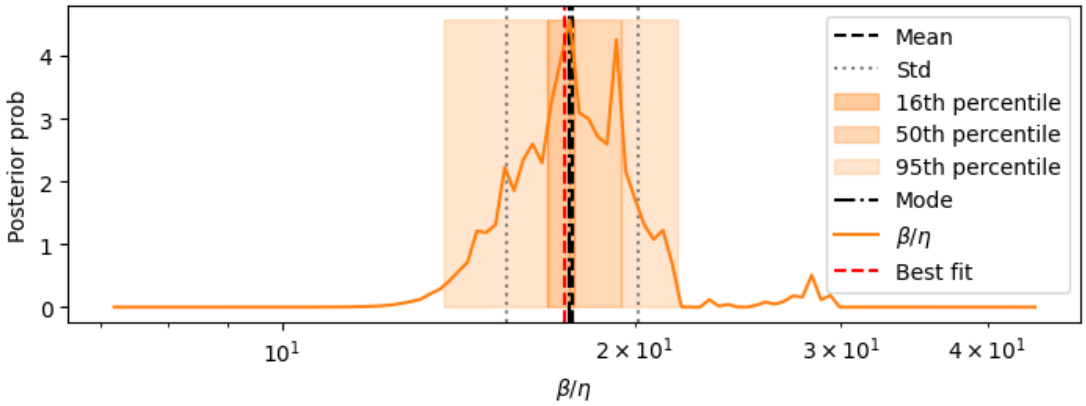
This plot shows all the raw sample points and their lnprobability

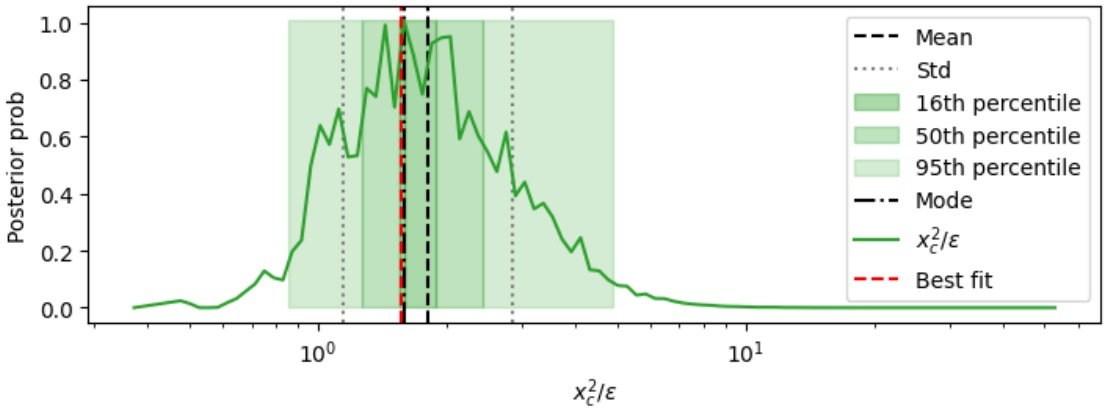


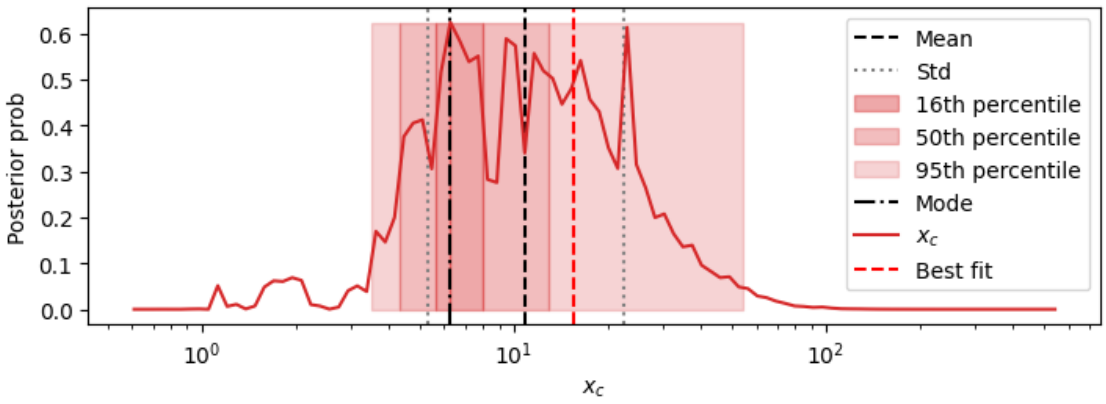
3 3. Posterior distributions of parameters

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

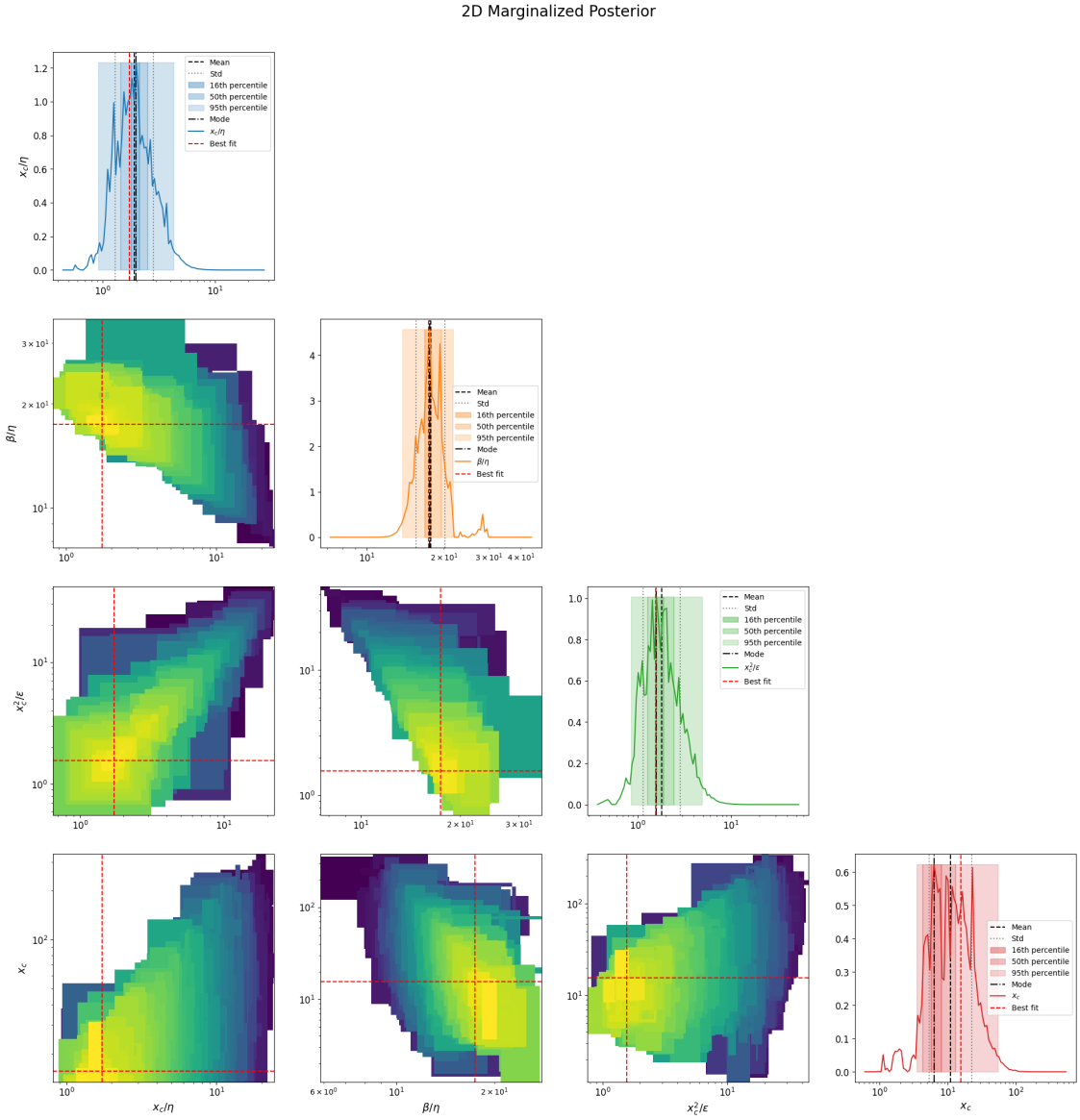

Posterior prob
1.2
1.0
0.8
0.6
0.4
0.2
0.0
10^0
10^1
x_c/η
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c/η
Best fit


Posterior prob
4
3
2
1
0
10^1
2×10^1
3×10^1
4×10^1
β/η
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
β/η
Best fit


Posterior prob
1.0
0.8
0.6
0.4
0.2
0.0
10^0
10^1
x_c^2/ε
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c^2/ε
Best fit


Posterior prob
0.6
0.5
0.4
0.3
0.2
0.1
0.0
10^0
10^1
10^2
x_c
Mean
Std
16th percentile
50th percentile
95th percentile
Mode
x_c
Best fit

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	1.918	[0.912, 0.618]	1.908
beta/eta	17.73	[2.446, 2.15]	17.62
xc^2/epsilon	1.811	[1.039, 0.66]	1.757
xc	10.916	[11.543, 5.61]	6.724
eta	5.423	[5.079, 2.623]	9.54
beta	97.523	[81.576, 44.42]	160.378
epsilon	57.966	[165.539, 42.933]	138.069
sqrt(xc/eta)	1.422	[0.321, 0.262]	1.381
s= eta^0.5*xc^1.5/epsilon	1.35	[0.42, 0.32]	1.265
beta*xc/epsilon	16.549	[1.797, 1.621]	15.647
eta*xc/epsilon	0.949	[0.0702, 0.0654]	0.916
Fx=beta^2/eta*xc	151.166	[143.145, 73.523]	162.614
Dx =beta*epsilon/eta*xc^2	9.125	[7.463, 4.105]	10.076
Pk=beta*k/epsilon	0.764	[0.97, 0.427]	0.511
Fk=beta^2/eta*k	3559.133	[2828.982, 1576.165]	5855.25
Dk =beta*epsilon/eta*k^2	4584.269	[11222.361, 3254.73]	9659.354
Fk^2/Dk=beta^3/eta*epsilon	2724.281	[2762.933, 1371.736]	2775.94
beta^2/epsilon	159.692	[128.63, 71.244]	168.658
k/beta	0.00517	[0.00439, 0.00237]	0.00385
k/epsilon	0.00853	[0.0244, 0.00632]	0.00321
best fit_MedianLifetime	12.81	0.51	12.81
best fit_MaxLifetime	19.07	0	19.07
data_MedianLifetime	12.3	0.52	12.3
data_MaxLifetime	19.36	0	19.36

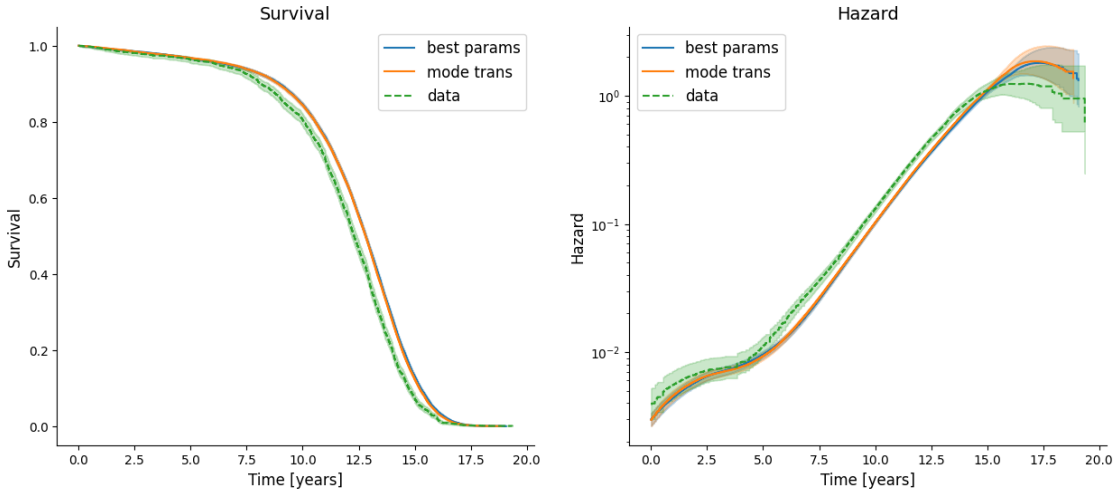
	percentile_16	percentile_50
xc/eta	[1.72, 2.032]	[1.396, 2.4]
beta/eta	[17.144, 18.11]	[16.528, 19.131]
xc^2/epsilon	[1.55, 1.894]	[1.207, 2.314]
xc	[5.663, 7.982]	[5.288, 14.806]
eta	[7.813, 10.392]	[4.949, 11.649]
beta	[140.522, 183.04]	[87.317, 203.455]
epsilon	[91.187, 164.933]	[31.381, 209.053]
sqrt(xc/eta)	[1.311, 1.425]	[1.207, 1.582]
s= eta^0.5*xc^1.5/epsilon	[1.175, 1.321]	[1.077, 1.575]
beta*xc/epsilon	[15.369, 15.931]	[15.005, 16.513]
eta*xc/epsilon	[0.902, 0.93]	[0.884, 0.968]
Fx=beta^2/eta*xc	[144.641, 182.82]	[97.89, 231.076]
Dx =beta*epsilon/eta*xc^2	[9.095, 11.163]	[6.465, 13.7]
Pk=beta*k/epsilon	[0.419, 0.625]	[0.387, 1.284]
Fk=beta^2/eta*k	[5076.133, 6379.005]	[3214.348, 6753.952]
Dk =beta*epsilon/eta*k^2	[7332.175, 12725.163]	[2718.053, 15864.835]
Fk^2/Dk=beta^3/eta*epsilon	[2432.906, 3167.342]	[1868.769, 4502.508]
beta^2/epsilon	[151.917, 187.243]	[123.256, 247.441]
k/beta	[0.00337, 0.00439]	[0.00233, 0.00543]
k/epsilon	[0.00269, 0.00487]	[0.00212, 0.0141]

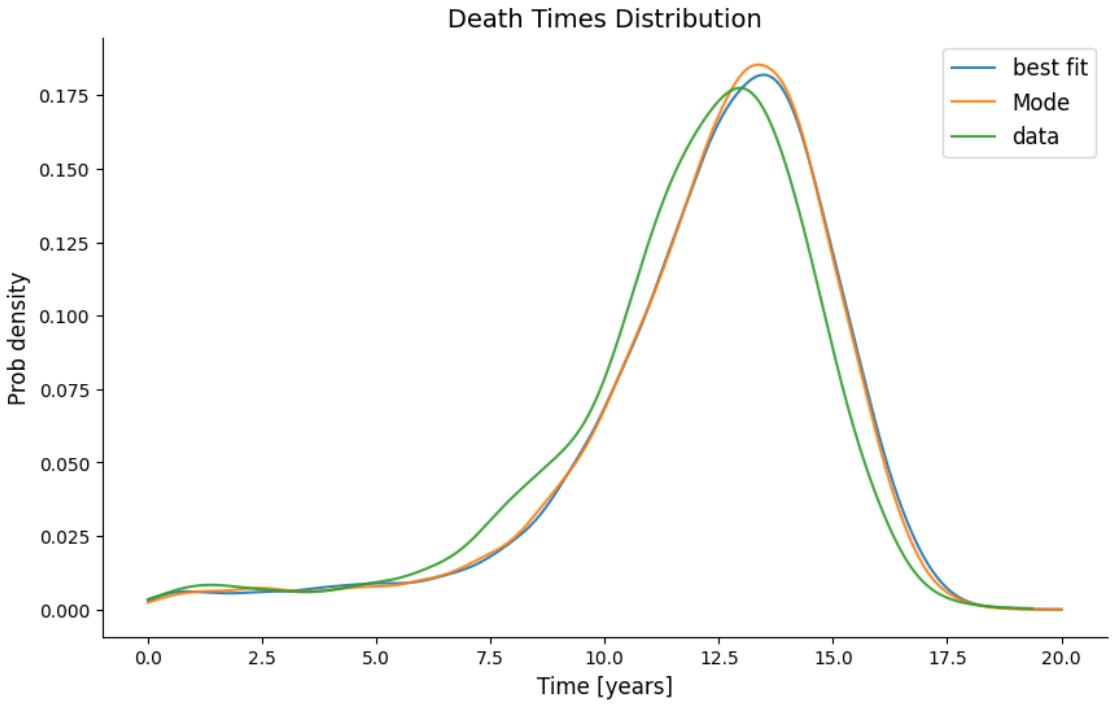
best fit_MedianLifetime	[12.32, 13.32]	[12.32, 13.32]
best fit_MaxLifetime	[19.07, 19.07]	[19.07, 19.07]
data_MedianLifetime	[11.82, 12.82]	[11.82, 12.82]
data_MaxLifetime	[19.36, 19.36]	[19.36, 19.36]

	percentile_95	max_likelihood	mode_overall
xc/eta	[0.96, 4.3]	1.731	1.57
beta/eta	[14.021, 20.962]	17.423	17.195
xc^2/epsilon	[0.809, 4.436]	1.56	1.408
xc	[3.503, 44.406]	15.561	22.728
eta	[1.581, 15.495]	8.988	10.795
beta	[30.331, 251.368]	156.595	196.283
epsilon	[4.184, 539.577]	155.185	184.9
sqrt(xc/eta)	[0.98, 2.162]	1.316	1.398
s= eta^0.5*xc^1.5/epsilon	[0.827, 2.304]	1.186	1.279
beta*xc/epsilon	[14.476, 19.527]	15.702	15.65
eta*xc/epsilon	[0.841, 1.102]	0.901	0.924
Fx=beta^2/eta*xc	[38.354, 431.56]	175.338	169.554
Dx =beta*epsilon/eta*xc^2	[2.662, 25.325]	11.166	10.801
Pk=beta*k/epsilon	[0.148, 2.859]	0.505	0.81
Fk=beta^2/eta*k	[1025.635, 8016.282]	5456.852	7038.435
Dk =beta*epsilon/eta*k^2	[417.056, 34327.194]	10815.449	13447.918
Fk^2/Dk=beta^3/eta*epsilon	[650.544, 8332.66]	2753.213	3788.678
beta^2/epsilon	[46.46, 403.029]	158.017	208.367
k/beta	[0.00199, 0.0165]	0.00319	0.00255
k/epsilon	[0.000926, 0.106]	0.00322	0.0027
best fit_MedianLifetime	[12.32, 13.32]	12.81	NaN
best fit_MaxLifetime	[19.07, 19.07]	19.07	NaN
data_MedianLifetime	[11.82, 12.82]	12.3	NaN
data_MaxLifetime	[19.36, 19.36]	19.36	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]