humans_F_combined_post.csv_run_12_20250529_144926

May 29, 2025

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/Users/navehr/Dropbox/naveh/weizmann/uri alon/aging/code_3

Loading file from: /Users/navehr/Dropbox/naveh/weizmann/uri alon/aging/code_3/ba
ysian02/posterior_csvs_baysian01/HUMANS/humans_F_combined_post.csv

 Binning samples:   0%|
| 0/5 [00:00<?, ?it/s]

 Binning samples: 100%|

                            | 5/5 [00:00<00:00,
154.50it/s]


 Processing samples:   0%|
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 Processing samples:  23%|
| 70139/299505 [00:00<00:00, 701368.93it/s]

 Processing samples:  49%|

| 145957/299505 [00:00<00:00, 734774.84it/s]

 Processing samples:  75%|

| 225446/299505 [00:00<00:00, 762220.44it/s]

 Processing samples: 100%|

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765635.56it/s]


 Averaging log-probabilities:   0%|
| 0/3040 [00:00<?, ?it/s]

 Averaging log-probabilities: 100%|

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429750.06it/s]
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 Processing unique samples for set 0:   0%|
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 Processing unique samples for set 0: 100%|

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544901.03it/s]


 Binning samples:   0%|
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 Binning samples: 100%|

                            | 5/5 [00:00<00:00,
145.99it/s]


 Processing samples:   0%|
| 0/349044 [00:00<?, ?it/s]

 Processing samples:  20%|
| 71529/349044 [00:00<00:00, 715270.22it/s]

 Processing samples:
42%|
| 146319/349044 [00:00<00:00, 734455.13it/s]

 Processing samples:  64%|

| 223176/349044 [00:00<00:00, 750025.48it/s]

 Processing samples:  86%|

                                 | 300892/349044 [00:00<00:00,
760731.58it/s]

 Processing samples: 100%|

                     | 349044/349044 [00:00<00:00,
755930.71it/s]


 Averaging log-probabilities:   0%|
| 0/3488 [00:00<?, ?it/s]

 Averaging log-probabilities: 100%|

                       | 3488/3488 [00:00<00:00,
422129.22it/s]
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 Processing unique samples for set 1:   0%|
| 0/3488 [00:00<?, ?it/s]

 Processing unique samples for set 1: 100%|

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514370.73it/s]


 Binning samples:   0%|
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 Binning samples:  80%|

                                              | 4/5 [00:00<00:00,
38.89it/s]

 Binning samples: 100%|

                             | 5/5 [00:00<00:00,
39.24it/s]


 Processing samples:   0%|
| 0/1194700 [00:00<?, ?it/s]

 Processing samples:   6%|
| 71473/1194700 [00:00<00:01, 714715.35it/s]

 Processing samples:  12%|
| 147111/1194700 [00:00<00:01, 739210.70it/s]

 Processing samples:  19%|
| 225409/1194700 [00:00<00:01, 759186.81it/s]

 Processing samples:  26%|
| 304910/1194700 [00:00<00:01, 773298.17it/s]

 Processing samples:
32%|
| 382440/1194700 [00:00<00:01, 774008.97it/s]

 Processing samples:
39%|
| 461538/1194700 [00:00<00:00, 779773.51it/s]

 Processing samples:  45%|

| 539516/1194700 [00:00<00:00, 775983.64it/s]

 Processing samples:  52%|

| 617119/1194700 [00:00<00:00, 774891.86it/s]
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 Processing samples:  58%|
| 694611/1194700 [00:00<00:00, 774651.68it/s]
 Processing samples:  65%|
| 772667/1194700 [00:01<00:00, 776463.97it/s]
 Processing samples:  71%|
| 850315/1194700 [00:01<00:00, 774400.59it/s]
 Processing samples:  78%|
                                    | 929487/1194700 [00:01<00:00,
779648.36it/s]
 Processing samples:  85%|
                                | 1010359/1194700 [00:01<00:00,
788431.44it/s]
 Processing samples:  91%|
                           | 1091401/1194700 [00:01<00:00,
795058.75it/s]
 Processing samples:  98%|
                     | 1170911/1194700 [00:01<00:00,
794080.60it/s]
 Processing samples: 100%|
                    | 1194700/1194700 [00:01<00:00,
778721.62it/s]


 Averaging log-probabilities:   0%|
| 0/9649 [00:00<?, ?it/s]
 Averaging log-probabilities: 100%|
                       | 9649/9649 [00:00<00:00,
415545.83it/s]


 Processing unique samples for set 2:   0%|
| 0/9649 [00:00<?, ?it/s]
 Processing unique samples for set 2: 100%|
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                        | 9649/9649 [00:00<00:00,
162656.95it/s]


Reading Humans_F
```

1 # 1. Density coner plot

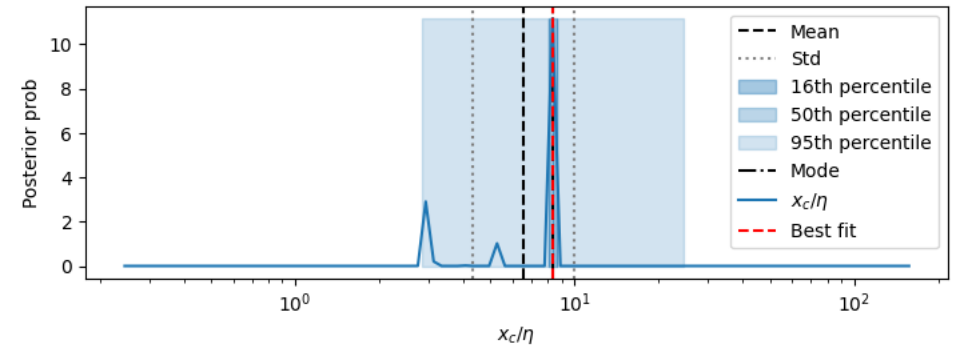
A sample is 1 parameter set scanned. For the corner plot below, the quantiles (represented by the solid lines) are 0.16,0.5,0.84 of the samples. Dots represent individual samples (outside the line surrounding 0.84 of the samples) The parameter search is performed in the transformed space of x_c/η, β/η, x_c^2/ϵ, x_c but we also show the regular parameters

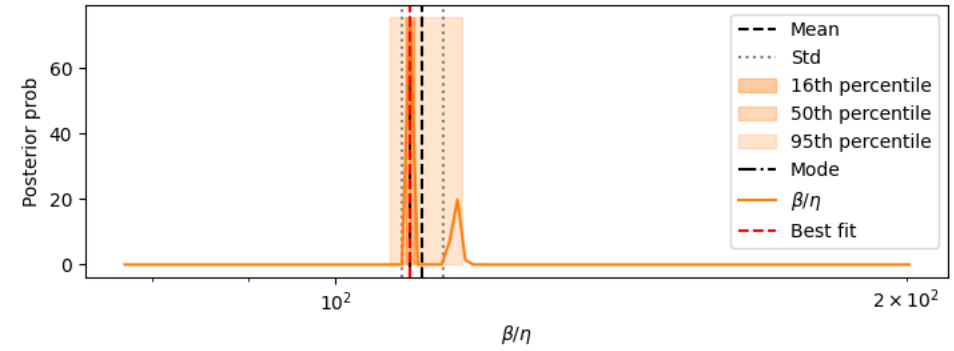
2 2. Heat map corner plot of raw samples

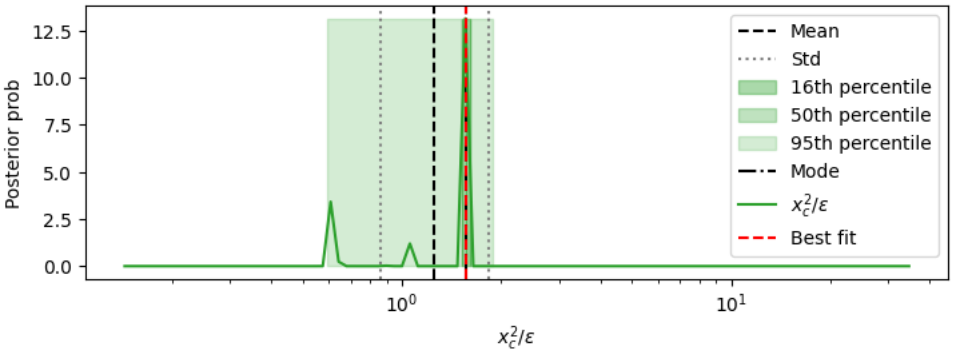
This plot shows all the raw sample points and their lnprobability

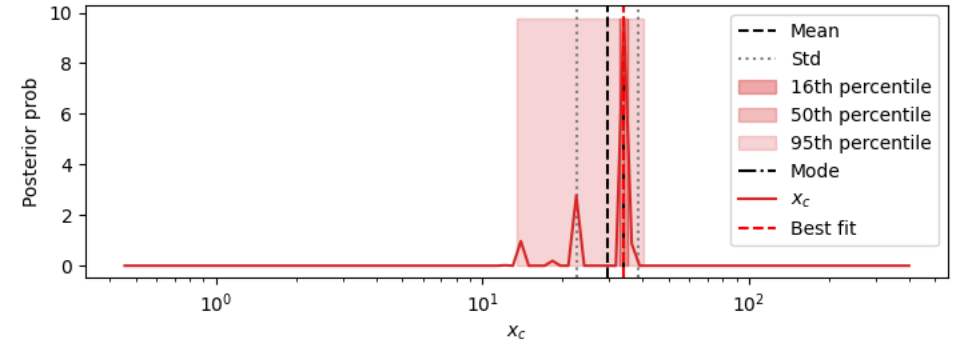
3 3. Posterior distributions of parameters

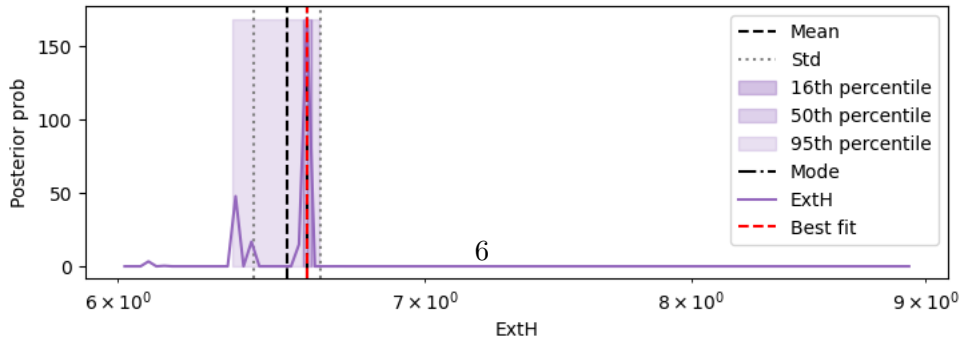
1d marginalizations of posterior distributions. we use a grid of size nbins=100-150


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


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


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


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


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

2D marginalizations of posterior distributions

```
 Creating corner plot:   0%|
| 0/5 [00:00<?, ?it/s]

 Creating corner plot:
40%|
| 2/5 [00:00<00:00,  3.40it/s]

 Creating corner plot:  60%|

| 3/5 [00:01<00:01,  1.54it/s]

 Creating corner plot:  80%|

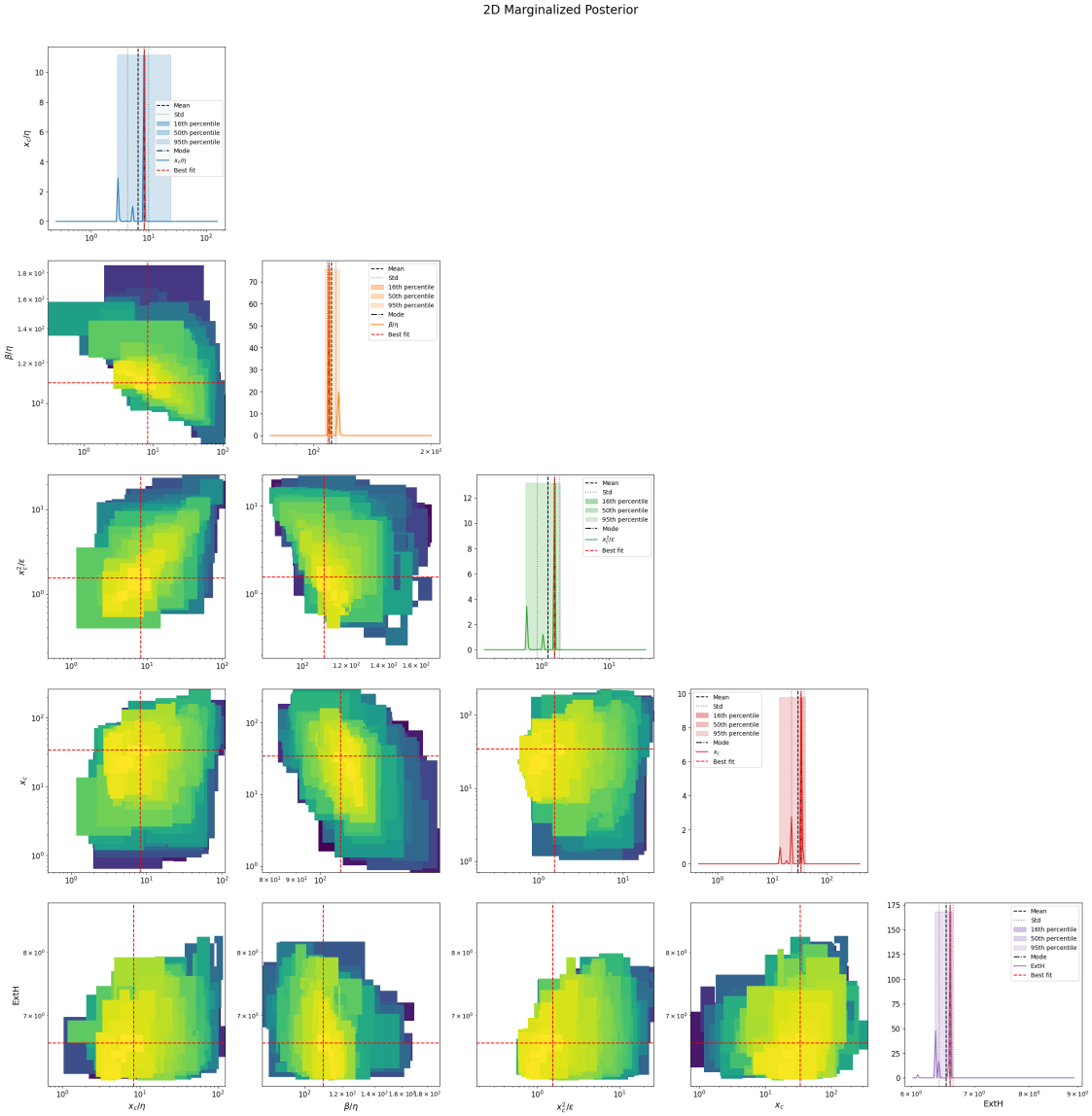
                                                | 4/5 [00:04<00:01,
1.45s/it]

 Creating corner plot: 100%|

                               | 5/5 [00:09<00:00,
2.66s/it]

 Creating corner plot: 100%|

                               | 5/5 [00:09<00:00,
1.89s/it]
```




```
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	6.536	[3.399, 2.236]	3.13	
beta/eta	111.13	[2.807, 2.738]	115.968	
xc^2/epsilon	1.253	[0.574, 0.394]	0.946	
xc	29.486	[9.017, 6.905]	21.058	

ExtH	6.532	[0.111, 0.109]	6.366
eta	6.432	[2.25, 1.667]	2.711
beta	734.874	[272.434, 198.752]	305.348
epsilon	780.035	[236.633, 181.556]	160.515
sqrt(xc/eta)	1.961	[0.494, 0.395]	1.769
s= eta^0.5*xc^1.5/epsilon	0.395	[0.0863, 0.0709]	0.475
beta*xc/epsilon	23.236	[1.338, 1.265]	24.755
eta*xc/epsilon	0.198	[0.00301, 0.00296]	0.202
Fx=beta^2/eta*xc	1588.463	[531.948, 398.498]	1571.084
Dx =beta*epsilon/eta*xc^2	73.422	[21.844, 16.835]	117.908
Pk=beta*k/epsilon	0.521	[0.198, 0.143]	0.592
Fk=beta^2/eta*k	145303.484	[75661.191, 49753.811]	73539.941
Dk =beta*epsilon/eta*k^2	182510.696	[178802.87, 90318.879]	357828.621
Fk^2/Dk=beta^3/eta*epsilon	50248.638	[26888.69, 17515.774]	90969.336
epsilon/beta^2	0.00141	[0.001, 0.000586]	0.00111
k/beta	0.000682	[0.000246, 0.000181]	0.00164
k^2/epsilon	0.000325	[0.0001, 7.65e-05]	0.000348
best fit_MedianLifetime	74.86	0.51	74.86
best fit_MaxLifetime	108.57	0	108.57
data_MedianLifetime	80.0	0.5	80.0
data_MaxLifetime	109.0	0	109.0

	percentile_16	percentile_50	\
xc/eta	[3.029, 3.233]	[3.029, 3.233]	
beta/eta	[115.411, 116.527]	[115.411, 117.654]	
xc^2/epsilon	[0.92, 0.972]	[0.87, 1.028]	
xc	[20.349, 21.791]	[20.349, 23.336]	
ExtH	[6.353, 6.378]	[6.353, 6.378]	
eta	[2.624, 2.802]	[2.457, 2.802]	
beta	[295.838, 315.164]	[277.698, 357.686]	
epsilon	[149.946, 171.828]	[149.946, 196.904]	
sqrt(xc/eta)	[1.74, 1.798]	[1.74, 1.798]	
s= eta^0.5*xc^1.5/epsilon	[0.468, 0.482]	[0.454, 0.482]	
beta*xc/epsilon	[24.362, 25.155]	[23.595, 25.155]	
eta*xc/epsilon	[0.199, 0.204]	[0.199, 0.204]	
Fx=beta^2/eta*xc	[1510.5, 1634.099]	[1396.249, 1634.099]	
Dx =beta*epsilon/eta*xc^2	[114.259, 121.674]	[107.295, 129.571]	
Pk=beta*k/epsilon	[0.564, 0.622]	[0.564, 0.687]	
Fk=beta^2/eta*k	[71220.742, 75934.661]	[66799.456, 80960.582]	
Dk =beta*epsilon/eta*k^2	[335196.868, 381988.42]	[294137.032, 435311.804]	
Fk^2/Dk=beta^3/eta*epsilon	[86699.068, 95449.932]	[86699.068, 105084.054]	
epsilon/beta^2	[0.00106, 0.00116]	[0.00106, 0.00127]	
k/beta	[0.00159, 0.00169]	[0.0014, 0.0018]	
k^2/epsilon	[0.000325, 0.000372]	[0.000283, 0.000372]	
best fit_MedianLifetime	[74.37, 75.37]	[74.37, 75.37]	
best fit_MaxLifetime	[108.57, 108.57]	[108.57, 108.57]	
data_MedianLifetime	[79.51, 80.5]	[79.51, 80.5]	

```
data_MaxLifetime                      [109.0, 109.0]            [109.0, 109.0]

                                    percentile_95 max_likelihood  \
xc/eta                              [2.658, 3.684]          3.057
beta/eta                          [114.306, 118.791]        117.061
xc^2/epsilon                        [0.624, 1.086]          0.631
xc                                  [17.745, 24.989]         18.489
ExtH                                [6.303, 6.404]          6.093
eta                                 [2.155, 3.194]          6.049
beta                                [88.897, 924.14]        708.088
epsilon                             [44.005, 881.063]       542.144
sqrt(xc/eta)                         [1.63, 1.858]          1.748
s= eta^0.5*xc^1.5/epsilon            [0.44, 0.529]          0.361
beta*xc/epsilon                     [21.434, 26.818]         24.148
eta*xc/epsilon                       [0.195, 0.215]          0.206
Fx=beta^2/eta*xc                   [1019.369, 4914.6]       4483.132
Dx =beta*epsilon/eta*xc^2            [64.88, 166.627]        185.649
Pk=beta*k/epsilon                    [0.511, 0.758]          0.653
Fk=beta^2/eta*k              [40004.091, 198583.673]      165778.88
Dk =beta*epsilon/eta*k^2     [69871.007, 1411083.31]     253855.816
Fk^2/Dk=beta^3/eta*epsilon   [64972.689, 115690.585]     108260.813
epsilon/beta^2                   [0.000972, 0.00139]        0.00108
k/beta                           [0.000541, 0.00724]       0.000706
k^2/epsilon                      [0.000164, 0.00191]       0.000461
best fit_MedianLifetime              [74.37, 75.37]          74.86
best fit_MaxLifetime                [108.57, 108.57]         108.57
data_MedianLifetime                   [79.51, 80.5]           80.0
data_MaxLifetime                      [109.0, 109.0]          109.0

                            mode_overall
xc/eta                             8.329
beta/eta                         109.461
xc^2/epsilon                       1.557
xc                                34.007
ExtH                               6.598
eta                                7.742
beta                             895.358
epsilon                          823.052
sqrt(xc/eta)                       1.712
s= eta^0.5*xc^1.5/epsilon           0.35
beta*xc/epsilon                   23.975
eta*xc/epsilon                     0.197
Fx=beta^2/eta*xc                1452.251
Dx =beta*epsilon/eta*xc^2         66.952
Pk=beta*k/epsilon                  0.536
Fk=beta^2/eta*k               205050.259
Dk =beta*epsilon/eta*k^2       85000.674
```

Fk^2/Dk=beta^3/eta*epsilon	61922.751
epsilon/beta^2	0.00102
k/beta	0.000558
k^2/epsilon	0.000303
best fit_MedianLifetime	NaN
best fit_MaxLifetime	NaN
data_MedianLifetime	NaN
data_MaxLifetime	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