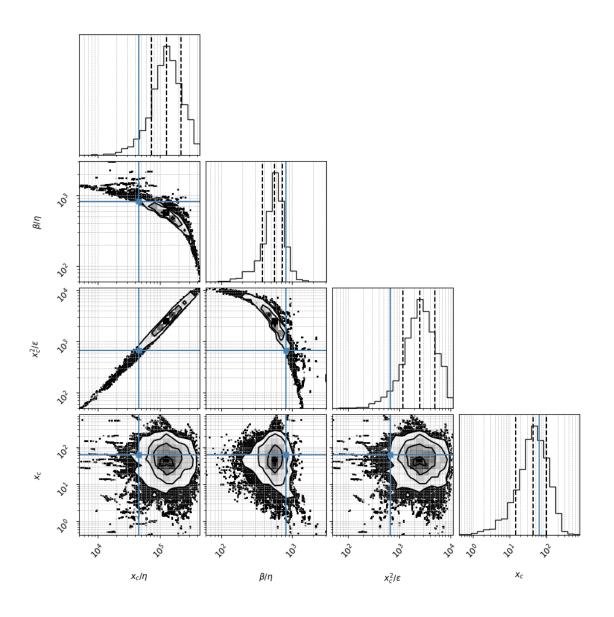
## mice\_F\_post.csv\_run\_1\_20250529\_133803

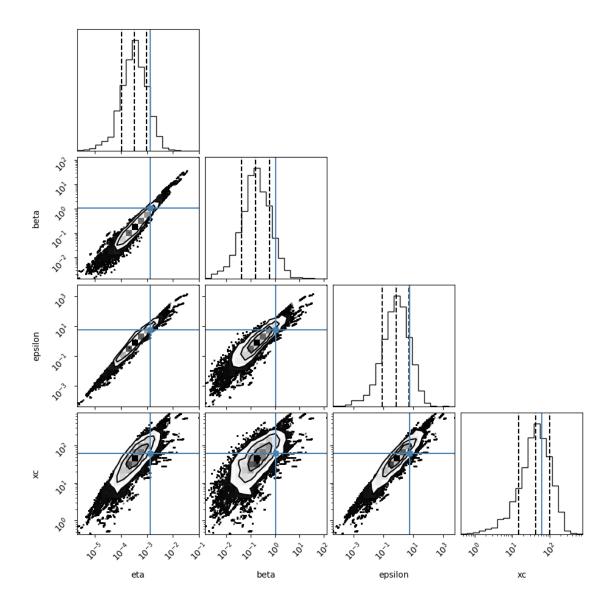
May 29, 2025

/Users/navehr/Dropbox/naveh/weizmann/uri alon/aging/code\_3
Loading file from: /Users/navehr/Dropbox/naveh/weizmann/uri
alon/aging/code\_3/baysian02/posterior\_csvs\_baysian01/mice\_F\_post.csv
Reading Mice\_F

#### 1 # 1. Density coner plot

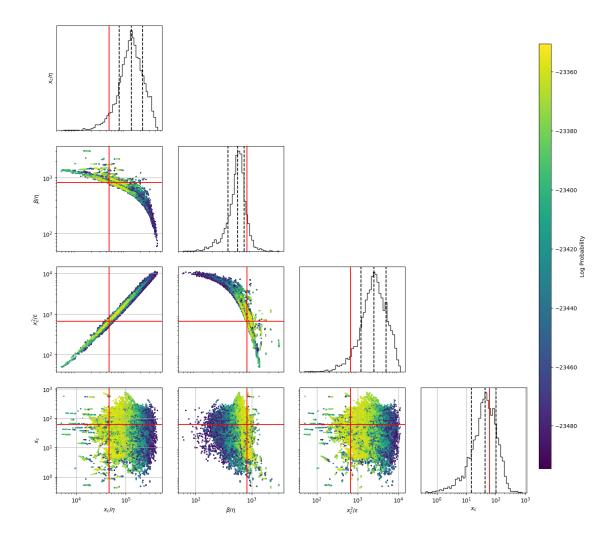
A sample is 1 parameter set scanned. For the corner plot below, the quantiles (represented by the solid lines) are 0.16, 0.5, 0.84 of the samples. Dots represent individual samples (outside the line surrounding 0.84 of the samples) The parameter search is performed in the transformed space of  $x_c/\eta$ ,  $\beta/\eta$ ,  $x_c^2/\epsilon$ ,  $x_c$  but we also show the regular parameters (16,)





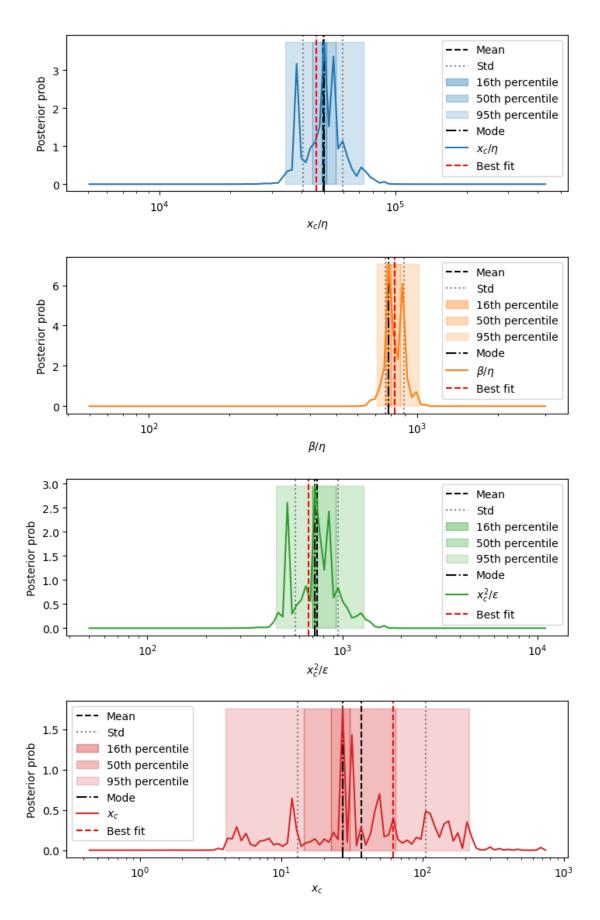
## 2 2. Heat map corner plot of raw samples

This plot shows all the raw sample points and their lnprobability



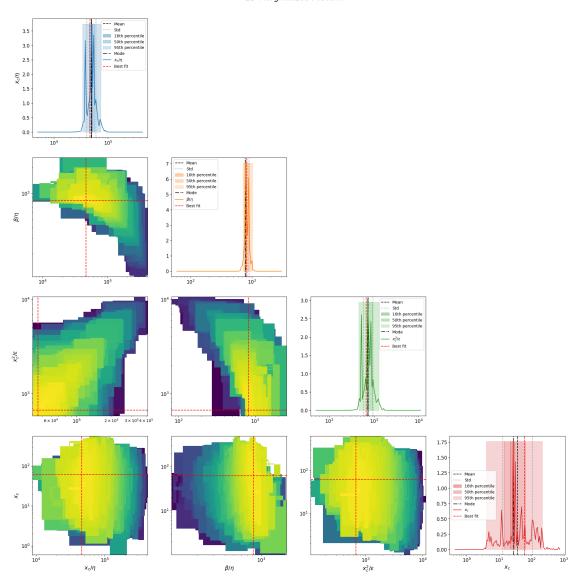
# 3 3. Posterior distributions of parameters

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



#### 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

beta/eta	817.858	Γ7/ //1	3, 68.207]	810.708	
xc^2/epsilon	771.968		756.961		
xc z, opsilon	38.975	[224.013, 173.629] [69.44, 24.964]		50.279	
eta	0.0008	[0.00155, 0.000528]		0.00264	
beta	0.667		13, 0.431]	0.71	
epsilon	2.072		99, 1.829]	20.192	
sqrt(xc/eta)	227.789		4, 21.716]	227.668	
s= eta^0.5*xc^1.5/epsilon	3.46	[0.	58, 0.497]	3.384	
beta*xc/epsilon	12.262	[0.7	78, 0.731]	12.234	
eta*xc/epsilon	0.0152	[0.000905,	0.000854]	0.0151	
Fx=beta^2/eta*xc	12.548	[5.2	94, 3.723]	12.658	
<pre>Dx =beta*epsilon/eta*xc^2</pre>	1.026	[0.3	99, 0.287]	1.036	
Pk=beta*k/epsilon	0.164	[0.3	24, 0.109]	0.052	
Fk=beta^2/eta*k	1029.941	[1725.101	, 644.909]	1320.887	
Dk =beta*epsilon/eta*k^2	7050.27		, 6198.07]	66974.732	
Fk^2/Dk=beta^3/eta*epsilon	171.055		1, 53.991]	171.586	
epsilon/beta^2	4.864		78, 1.247]	5.083	
k/beta	0.703		19, 0.442]	0.704	
k^2/epsilon	0.101	[0.6	8, 0.0877]	0.014	
best fit_MedianLifetime	887.58		0.51	887.58	
best fit_MaxLifetime	1411.18		0	1411.18	
data_MedianLifetime	882.0		0.52	882.0	
data_MaxLifetime	1456.0		0	1456.0	
	per	centile_16	p	ercentile_50	\
xc/eta	per [49556.82,	centile_16 54213.033]	-	percentile_50 6, 59306.731]	\
xc/eta beta/eta	[49556.82,		[45300.516		\
	[49556.82, [779.277	54213.033]	[45300.516 [759.0	5, 59306.731]	\
beta/eta	[49556.82, [779.277 [716.902	54213.033] 7, 821.464]	[45300.516 [759.0 [666.7	5, 59306.731] 003, 865.935]	\
beta/eta xc^2/epsilon	[49556.82, [779.277 [716.902 [40.14	54213.033] 7, 821.464] 2, 799.258]	[45300.516 [759.0 [666.7	5, 59306.731] 003, 865.935] 769, 923.966]	\
beta/eta xc^2/epsilon xc	[49556.82, [779.277 [716.902 [40.14 [0.00191	54213.033] 7, 821.464] 2, 799.258] 4, 59.901]	[45300.516 [759.0 [666.7 [2	5, 59306.731] 903, 865.935] 769, 923.966] 90.95, 89.38]	\
beta/eta xc^2/epsilon xc eta	[49556.82, [779.277 [716.902 [40.14 [0.00191	54213.033] 7, 821.464] 2, 799.258] 44, 59.901] 1, 0.00294]	[45300.516 [759.0 [666.7 [2 [0.0007	5, 59306.731] 003, 865.935] 69, 923.966] 00.95, 89.38] 48, 0.00316]	\
beta/eta xc^2/epsilon xc eta beta	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0.	54213.033] 7, 821.464] 2, 799.258] 4, 59.901] 1, 0.00294] 586, 0.86]	[45300.516 [759.0 [666.7 [2 [0.0007 [0 [1.	3, 59306.731] 903, 865.935] 769, 923.966] 90.95, 89.38] 748, 0.00316] 9.543, 2.002] 965, 35.588] 839, 243.53]	\
<pre>beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon</pre>	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0. [14.73 [222.614	54213.033] 7, 821.464] 2, 799.258] 4, 59.901] 1, 0.00294] 586, 0.86] 8, 31.377] 4, 232.837] 275, 3.496]	[45300.516 [759.0 [666.7 [2 [0.0007 [0.0007 [1. [212.	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 399, 243.53] 3.068, 3.815]	\
<pre>beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon</pre>	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0. [14.73 [222.614 [3.2]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 9586, 0.86] 98, 31.377] 91, 232.837] 9275, 3.496] 96, 12.374]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3	3, 59306.731] 903, 865.935] 669, 923.966] 90.95, 89.38] 948, 0.00316] 9.543, 2.002] 965, 35.588] 839, 243.53] 8.068, 3.815] 824, 12.95]	\
<pre>beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon</pre>	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0. [14.73 [222.614 [3.2 [12.09	54213.033] 7, 821.464] 2, 799.258] 4, 59.901] 1, 0.00294] 586, 0.86] 8, 31.377] 1, 232.837] 275, 3.496] 16, 12.374] 19, 0.0153]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11 [0.0	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3145, 0.0157]	
<pre>beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc</pre>	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0. [14.73 [222.614 [3.2 [12.09 [0.014 [11.30	54213.033] 7, 821.464] 2, 799.258] 4, 59.901] 586, 0.86] 8, 31.377] 1, 232.837] 275, 3.496] 26, 12.374] 29, 0.0153] 26, 13.143]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11 [0.0 [9.	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3.145, 0.0157] 726, 15.279]	
<pre>beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2</pre>	[49556.82, [779.277 [716.902 [40.14 [0.00191 [0. [14.73 [222.614 [3.2 [12.09 [0.014 [11.30 [0.9	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 9586, 0.86] 88, 31.377] 97, 3.496] 96, 12.374] 99, 0.0153] 96, 13.143] 952, 1.128]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11 [0.0 [9.	3, 59306.731] 303, 865.935] 369, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 365, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3.145, 0.0157] 726, 15.279] 3.804, 1.263]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 1, 0.00294] 586, 0.86] 8, 31.377] 1, 232.837] 175, 3.496] 16, 12.374] 19, 0.0153] 16, 13.143] 162, 1.128] 19, 0.0647]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11 [0.0 [9.	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3145, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24]	54213.033] 7, 821.464] 2, 799.258] 4, 59.901] 586, 0.86] 8, 31.377] 1, 232.837] 275, 3.496] 26, 12.374] 29, 0.0153] 26, 13.143] 252, 1.128] 29, 0.0647] 4, 1667.63]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11 [0.0 [9. [0.0 [790.95	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 39, 243.53] 3.068, 3.815] 3.824, 12.95] 3145, 0.0157] 326, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2	[49556.82, [779.277] [716.902] [40.14] [0.00191] [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29,	54213.033] 7, 821.464] 8, 799.258] 4, 59.901] 7, 0.00294] 586, 0.86] 8, 31.377] 8, 232.837] 9, 232.837] 9, 0.0153] 96, 12.374] 99, 0.0153] 96, 13.143] 97, 0.0647] 98, 0.0647] 99, 0.0647] 99, 0.0647] 99, 0.0647]	[45300.516 [759.0 [666.7 [2 [0.0007 [0.007 [1. [212. [3 [11 [0.0 [9. [790.95 [7080.033,	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 399, 243.53] 3.068, 3.815] 3.068, 3.815] 3.145, 0.0157] 726, 15.279] 3.037, 0.175] 33, 3202.987] 119357.706]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2 Fk^2/Dk=beta^3/eta*epsilon	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29, [148.439]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 9, 586, 0.86] 98, 31.377] 97, 3.496] 96, 12.374] 99, 0.0153] 96, 13.143] 97, 1.128] 99, 0.0647] 91, 1667.63] 92325.529] 91, 180.077]	[45300.516 [759.0 [666.7 [2 [0.0007 [1. [212. [3 [11] [0.0 [9. [790.95 [7080.033, [122.	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 365, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3145, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987] 36, 218.459]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2 Fk^2/Dk=beta^3/eta*epsilon epsilon/beta^2	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73 [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29, [148.439]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 1, 0.00294] 586, 0.86] 8, 31.377] 1, 232.837] 175, 3.496] 16, 12.374] 19, 0.0153] 16, 13.143] 192325.529] 19, 180.077] 1907, 5.648]	[45300.516 [759.0 [666.7 [2] [0.0007 [1. [212. [3] [11 [0.0 [9. [790.95 [7080.033, [122.	3, 59306.731] 303, 865.935] 369, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 965, 35.588] 839, 243.53] 3.068, 3.815] 3.824, 12.95] 3.45, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987] 119357.706] 36, 218.459] 3.974, 6.059]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2 Fk^2/Dk=beta^3/eta*epsilon epsilon/beta^2 k/beta	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29, [148.439] [4.9] [0.5	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 9, 586, 0.86] 88, 31.377] 9, 232.837] 975, 3.496] 96, 12.374] 99, 0.0153] 96, 13.143] 97, 0.0647] 97, 1667.63] 92325.529] 97, 180.077] 907, 5.648] 938, 0.789]	[45300.516 [759.0 [666.7 [2 [0.0007 [0.007 [1. [212. [3 [11 [0.0 [9. [790.95 [7080.033, [122. [3	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 389, 243.53] 3.068, 3.815] 3.244, 12.95] 3.45, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987] 319357.706] 36, 218.459] 3.974, 6.059] 30.25, 0.852]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2 Fk^2/Dk=beta^3/eta*epsilon epsilon/beta^2 k/beta k^2/epsilon	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29, [148.439] [4.9] [0.5]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 586, 0.86] 88, 31.377] 975, 3.496] 96, 12.374] 99, 0.0153] 96, 13.143] 97, 1667.63] 92325.529] 9, 180.077] 907, 5.648] 938, 0.789] 92, 0.0218]	[45300.516 [759.0 [666.7 [2] [0.0007 [0.0007 [1.] [212. [3] [11] [0.00 [9. [790.95 [7080.033, [122. [3]	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 365, 35.588] 389, 243.53] 3.068, 3.815] 3.824, 12.95] 3.45, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987] 319357.706] 36, 218.459] 3974, 6.059] 30.25, 0.852]	
beta/eta xc^2/epsilon xc eta beta epsilon sqrt(xc/eta) s= eta^0.5*xc^1.5/epsilon beta*xc/epsilon eta*xc/epsilon Fx=beta^2/eta*xc Dx =beta*epsilon/eta*xc^2 Pk=beta*k/epsilon Fk=beta^2/eta*k Dk =beta*epsilon/eta*k^2 Fk^2/Dk=beta^3/eta*epsilon epsilon/beta^2 k/beta	[49556.82, [779.277 [716.902 [40.14] [0.00191 [0. [14.73] [222.614] [3.2] [12.09] [0.014] [11.30] [0.9] [0.041] [1046.24] [42730.29, [148.439] [4.9] [0.5]	54213.033] 7, 821.464] 8, 799.258] 84, 59.901] 9, 0.00294] 9, 586, 0.86] 88, 31.377] 9, 232.837] 975, 3.496] 96, 12.374] 99, 0.0153] 96, 13.143] 97, 0.0647] 97, 1667.63] 92325.529] 97, 180.077] 907, 5.648] 938, 0.789]	[45300.516 [759.0 [666.7 [2] [0.0007 [1. [212. [3] [11 [0.0 [9. [790.95 [7080.033, [122. [3] [0.00 [887	3, 59306.731] 303, 865.935] 309, 923.966] 30.95, 89.38] 348, 0.00316] 3.543, 2.002] 3965, 35.588] 389, 243.53] 3.068, 3.815] 3.244, 12.95] 3.45, 0.0157] 726, 15.279] 3.804, 1.263] 3.037, 0.175] 33, 3202.987] 319357.706] 36, 218.459] 3.974, 6.059] 30.25, 0.852]	

data_MedianLifetime	[881.52, 882.52]	[881.52,	882.52]
data_MaxLifetime	[1456.0, 1456.0]	[1456.0,	1456.0]
	percentile_95	${\tt max\_likelihood}$	${\tt mode\_overall}$
xc/eta	[35653.519, 77643.449]	46236.322	37651.206
beta/eta	[683.047, 962.229]	824.86	899.104
xc^2/epsilon	[481.166, 1327.636]	670.741	526.572
xc	[5.162, 189.293]	62.013	27.471
eta	[9.24e-05, 0.00393]	0.00134	0.00073
beta	[0.086, 2.939]	1.106	0.656
epsilon	[0.0308, 51.926]	5.733	1.433
sqrt(xc/eta)	[188.821, 278.646]	215.026	194.039
s= eta^0.5*xc^1.5/epsilon	[2.578, 4.742]	3.119	2.714
beta*xc/epsilon	[11.558, 14.842]	11.966	12.574
eta*xc/epsilon	[0.0136, 0.0171]	0.0145	0.014
Fx=beta^2/eta*xc	[6.191, 24.001]	14.716	21.47
<pre>Dx =beta*epsilon/eta*xc^2</pre>	[0.511, 1.876]	1.23	1.707
Pk=beta*k/epsilon	[0.0288, 1.445]	0.0965	0.229
Fk=beta^2/eta*k	[162.091, 5105.324]	1825.116	1179.612
Dk =beta*epsilon/eta*k^2	[116.299, 154304.686]	18916.972	5154.043
Fk^2/Dk=beta^3/eta*epsilon	[75.486, 354.115]	176.088	269.979
epsilon/beta^2	[3.0, 9.239]	4.684	3.33
k/beta	[0.17, 5.81]	0.452	0.762
k^2/epsilon	[0.00424, 6.302]	0.0436	0.174
best fit_MedianLifetime	[887.09, 888.09]	887.58	NaN
best fit_MaxLifetime	[1411.18, 1411.18]	1411.18	NaN
${\tt data\_MedianLifetime}$	[881.52, 882.52]	882.0	NaN
${\tt data\_MaxLifetime}$	[1456.0, 1456.0]	1456.0	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  $x_c/\eta,\,\beta/\eta,\,x_c^2/\epsilon,\,x_c$ 

