

```
###男の長寿者記録の没年齢(1982~2024)30data
xxxx30<-c(111.1452,110.9342,111.1671,111.6219,111.5589,112.3726,112.8082,112.0027,
113.3781,112.4959,115.6904,112.5726,112.4438,112.9479,114.5178,114.2219,
115.4274,113.7507,114.7260,116.1479,112.0521,112.4110,112.8548,113.9041,
113.1288,113.4904,114.4849,113.0110,112.9342,114.8521)
```

参考③
男性

```
> b30<-gum.fit(xxxx30,30)
$convc
[1] 0
```

```
$nllh
[1] 51.21882
```

```
$mle
[1] 112.519732 1.159015
```

```
$se
[1] 0.2235664 0.1639064
```

```
> gum.diag(b30)
```

```
> b30<-gev.fit(xxxx30,30)
$convc
[1] 0
```

Weibull は 肯定処理好む。

```
$nllh
[1] 50.86616
```

```
$mle
[1] 112.6113260 1.2120271 -0.1448733
```

```
$se
[1] 0.2554707 0.1864402 0.1627897
```

```
> gev.profxi(b30,xlow=-0.4381,xup=0.2291,conf=0.95,nint=500)
If routine fails, try changing plotting interval
```

```
> gev.prof(b30,m=200,xlow=115.7178,xup=117.918,conf=0.95,nint=500)
If routine fails, try changing plotting interval
```

```
> ###日本人男の1965~2024年の30データ解析
```

```
> xxx30<-c(103.9589,105.7425,104.4794,106.1123,108.0438,107.0767,108.0658,108.7205,107.852
1,109.7288,107.1534,108.1808,107.8932,110.9342,108.7041,109.0329,112.2356,112.5726,111.2466
,114.5178,109.7534,110.1479,113.7507,116.1479,112.4110,112.8548,113.4904,112.9726,112.3315,
112.4000)
```

```
> xxx30
[1] 103.9589 105.7425 104.4794 106.1123 108.0438 107.0767 108.0658 108.7205
[9] 107.8521 109.7288 107.1534 108.1808 107.8932 110.9342 108.7041 109.0329
[17] 112.2356 112.5726 111.2466 114.5178 109.7534 110.1479 113.7507 116.1479
[25] 112.4110 112.8548 113.4904 112.9726 112.3315 112.4000
```

```
> mean(xxx30)
[1] 109.9504
> var(xxx30)
[1] 9.435196
> gum.fit(xxx30,30)
```

```
$convc
[1] 0
$nllh
[1] 77.4127
```

```
$mle
[1] 108.437738 2.865084
```

```
$se
[1] 0.5545832 0.3904185
```

```
> b20<-gum.fit(xxx30,30)
$convc
```

(1)

男 世界 30 元-7 Grubbell \bar{x} -7 9708 113.1685
 / 分級 1.8920

μ
 112.5197
 0.2236

σ
 1.159015
 0.1639

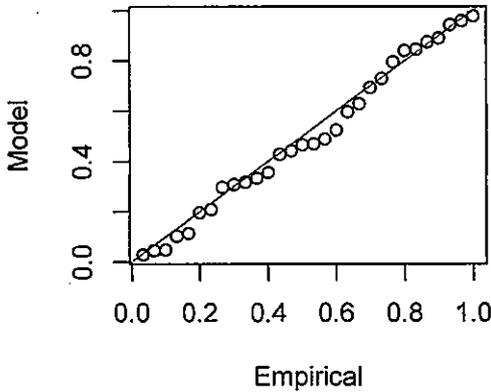
男: 上位 1% 位
 117.483

女
 分析

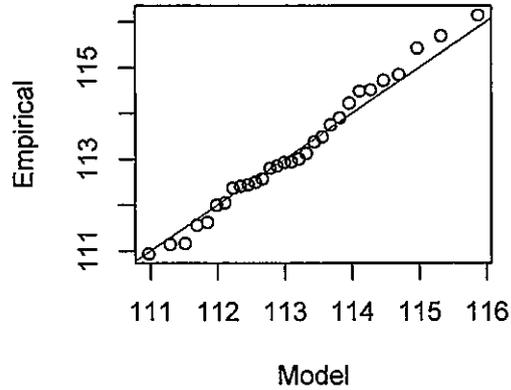
女 取 (連) 113.904
 ~ 121.0616

女: 上位 1% 位
 122.7482

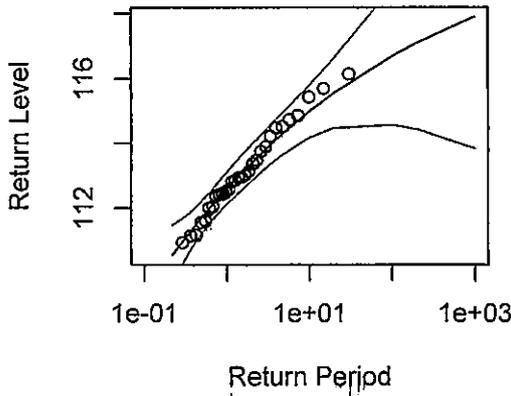
Probability Plot



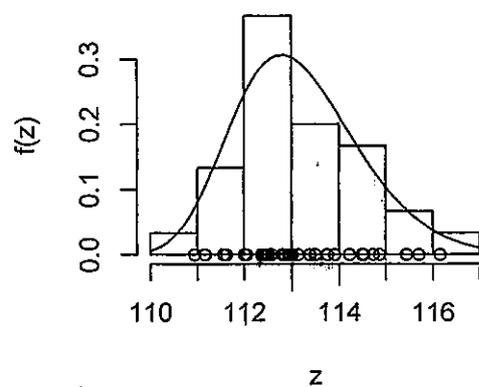
Quantile Plot



Return Level Plot



Density Plot



$$\sigma^* = 1.1590 + 0.123 \times \frac{\sqrt{1.1}}{\sqrt{1.1639}} \times (117.483 - 112.5197)$$

$$= 1.75245$$

$$t_{5\%} \text{ 取 (連)} \quad 117.483 \pm t_{0.025}^{30} \times 1.7524491$$

$$= 117.483 \pm 3.57859$$

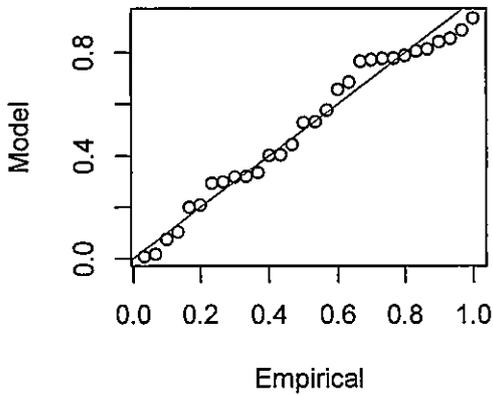
$$= 113.904 \sim 121.0616$$

04.1 第 3031-5

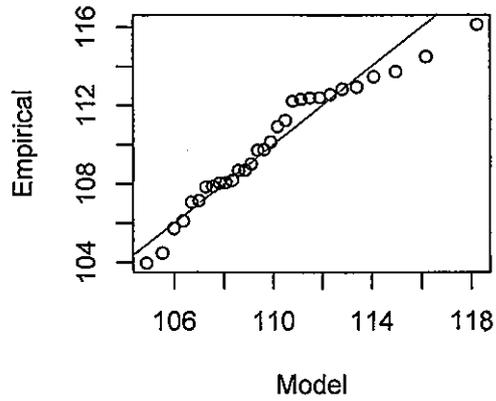
248 109.9504
154 9.435196

μ	σ	ξ
108.437738	2.865084	0
0.5545832	0.7904185	

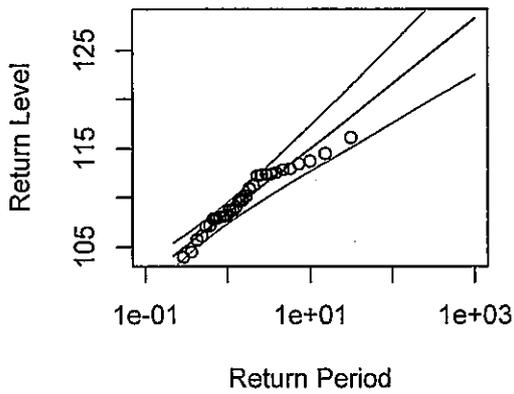
Probability Plot



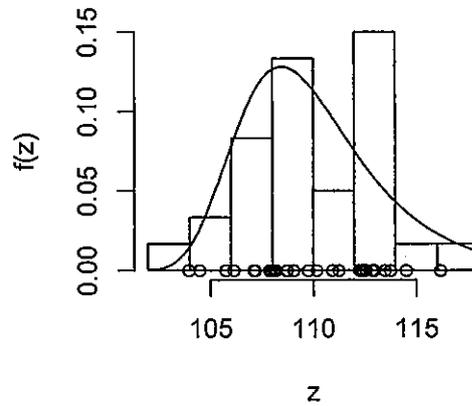
Quantile Plot



Return Level Plot

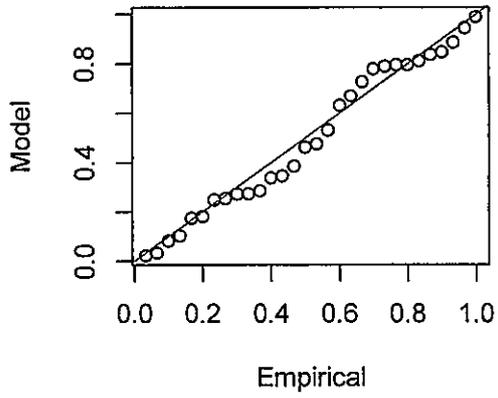


Density Plot

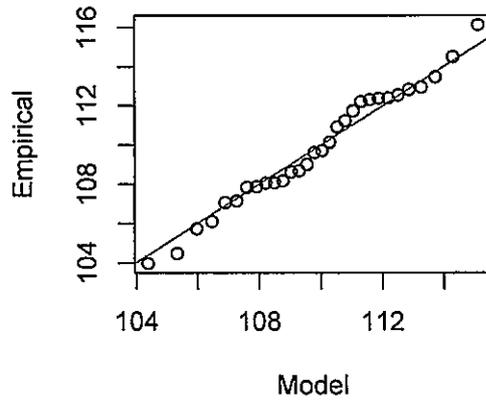


29人 第30页 - 一般线性分布

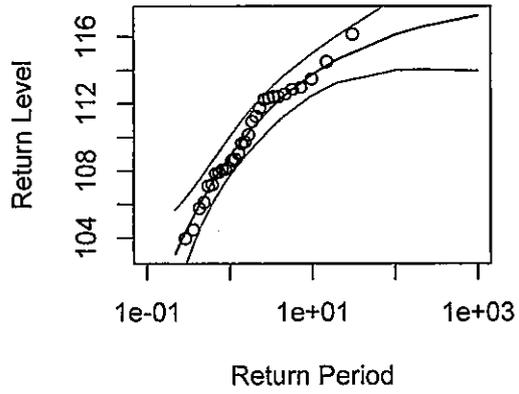
Probability Plot



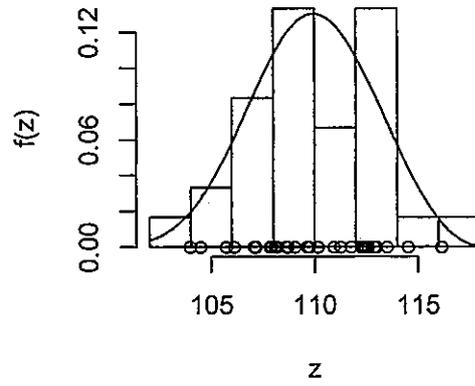
Quantile Plot



Return Level Plot



Density Plot

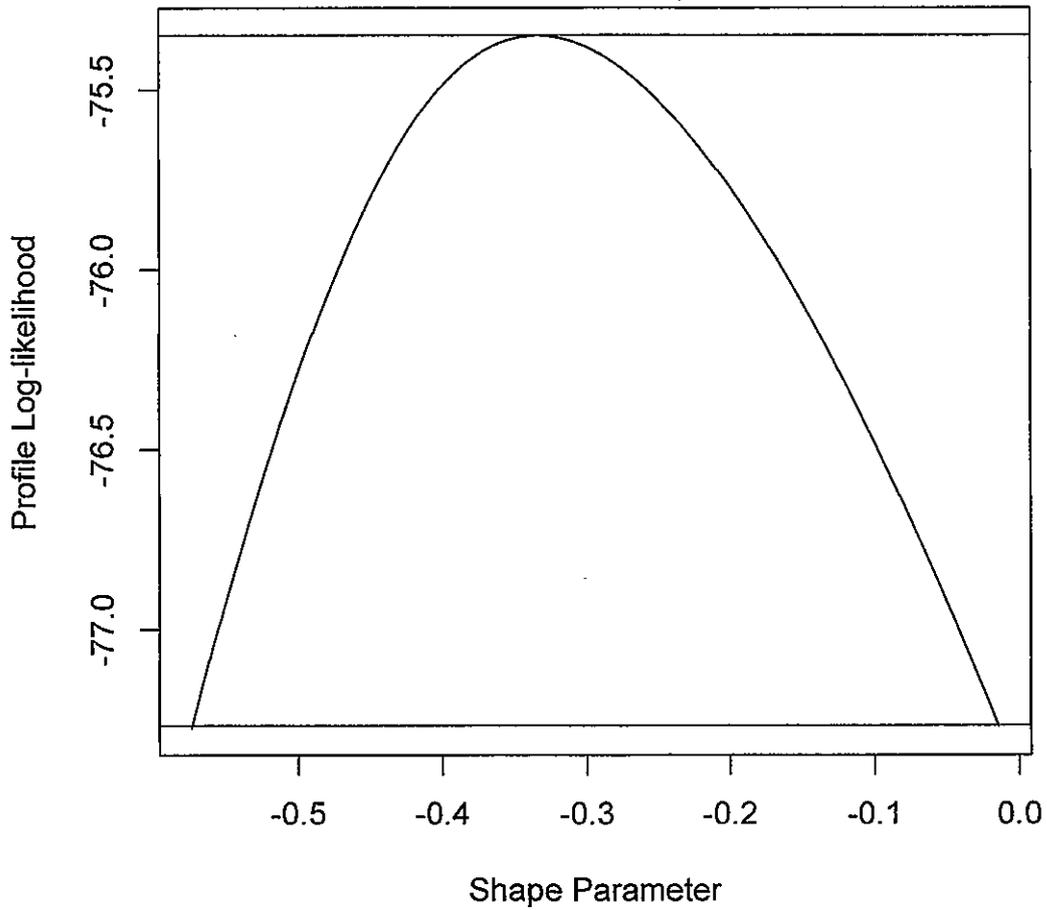


12월 18일 30월 25

구도
구도

μ	σ	λ
108.9571	3.0614	-0.3337
0.6212	0.4562	0.1312

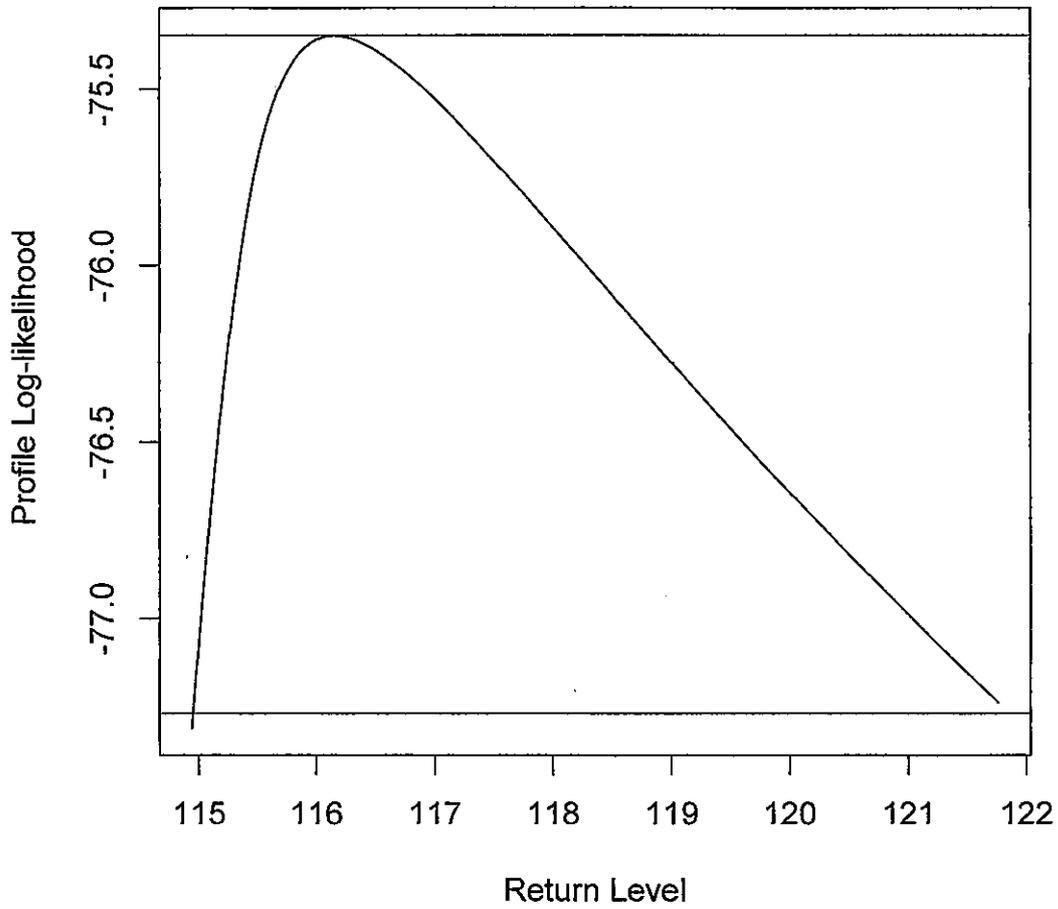
구도
구도



$\lambda(-0.5742, -0.01K)$

04/1/90 = 30322

w.rebull a 72 (A)



114.943 ~ 121.766 \Rightarrow 114.96 ~ 121.79

```
R version 4.3.3 (2024-02-29 ucrt) -- "Angel Food Cake"
Copyright (C) 2024 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)
```

参考④

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 一定の条件に従えば、自由にこれを再配布することができます。
 配布条件の詳細に関しては、'license()' あるいは 'licence()' と入力してください。

女性

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 詳しくは 'contributors()' と入力してください。
 また、R や R のパッケージを出版物で引用する際の形式については
 'citation()' と入力してください。

'demo()' と入力すればデモをみることができます。
 'help()' とすればオンラインヘルプが出ます。
 'help.start()' で HTML ブラウザによるヘルプがみられます。
 'q()' と入力すれば R を終了します。

[以前にセーブされたワークスペースを復帰します]

```
> chooseCRANmirror()
> local({pkg <- select.list(sort(.packages(all.available = TRUE)), graphics=TRUE)
+ if(nchar(pkg)) library(pkg, character.only=TRUE)})
  要求されたパッケージ mgcv をロード中です
  要求されたパッケージ nlme をロード中です
This is mgcv 1.9-1. For overview type 'help("mgcv-package")'.
> ####女の世界の長寿者記録の没年齢(1951~2024)46のデータカルマン嫌を含む
> yyyy46<-c(109.9863,112.0712,113.1781,111.8466,110.0932,109.6548,113.5644,113.1041,112.019
2,111.9288,112.4932,112.6247,111.9041,112.1781,113.1644,113.1890,112.3397,113.8712,113.2219
,113.4219,115.2164,114.5699,114.2548,116.0712,122.4493,
+ 117.6301,119.2658,115.9616,115.1151,115.1534,114.4986,114.7452,116.9507,114.6055,115.6027
,115.4329,114.9781,115.0329,116.2740,117.0740,116.8521,117.5178,117.7123,119.2932,118.9315,
117.4603)
> yyyy46
 [1] 109.9863 112.0712 113.1781 111.8466 110.0932 109.6548 113.5644 113.1041
 [9] 112.0192 111.9288 112.4932 112.6247 111.9041 112.1781 113.1644 113.1890
[17] 112.3397 113.8712 113.2219 113.4219 115.2164 114.5699 114.2548 116.0712
[25] 122.4493 117.6301 119.2658 115.9616 115.1151 115.1534 114.4986 114.7452
[33] 116.9507 114.6055 115.6027 115.4329 114.9781 115.0329 116.2740 117.0740
[41] 116.8521 117.5178 117.7123 119.2932 118.9315 117.4603
> mean(yyyy46)
 [1] 114.6631
> var(yyyy46)
 [1] 7.107322
> aa46<-gev.fit(yyyy46, 46)
$conv
 [1] 0

$nlh
 [1] 108.943

$mle
 [1] 113.5788766  2.3936644 -0.1413817

$se
 [1] 0.39086955 0.27335535 0.09320888

> gev.fit(yyyy46, 46)
$conv
 [1] 0

$nlh
 [1] 108.943

$mle
 [1] 113.5788766  2.3936644 -0.1413817

$se
 [1] 0.39086955 0.27335535 0.09320888

> gev.diag(aa46)
```

(1)

```

>
> ###女の世界の長寿者記録の没年齢1979~202430データカルマン嫌を含む
> yyy30<-c(112.3397,113.8712,113.2219,113.4219,115.2164,114.5699,114.2548,116.0712,122.449
3,
+ 117.6301,119.2658,115.9616,115.1151,115.1534,114.4986,114.7452,116.9507,114.6055,115.6027
,115.4329,114.9781,115.0329,116.2740,117.0740,116.8521,117.5178,117.7123,119.2932,118.9315,
117.4603)
> yyy30
 [1] 112.3397 113.8712 113.2219 113.4219 115.2164 114.5699 114.2548 116.0712
 [9] 122.4493 117.6301 119.2658 115.9616 115.1151 115.1534 114.4986 114.7452
[17] 116.9507 114.6055 115.6027 115.4329 114.9781 115.0329 116.2740 117.0740
[25] 116.8521 117.5178 117.7123 119.2932 118.9315 117.4603
> mean(yyy30)
 [1] 116.0501
> var(yyy30)
 [1] 4.560133
> aa30<-gev.fit(yyy30,30)
$conv
 [1] 0

$nlh
 [1] 62.92673

$mle
 [1] 115.12857789  1.72774229 -0.04639824

$se
 [1] 0.3515445 0.2496075 0.1231552

```

(1969~2025) 日本人女 (1969~2025)の30年データ

```
> ##女の1966~2025の30データ解析
> xy30<-c(112.0192,112.1781,113.1644,108.9233,109.1644,108.9260,110.4849,110.0795,111.1315,
109.1370,114.2329,116.4795,113.2877,114.5233,113.9534,113.2000,112.8685,114.4986,
+ 114.5973,113.6301,113.7589,114.9781,115.0329,115.0521,117.0740,117.7123,119.2932,116.6329
,116.6027,114.6466)
> xy30
 [1] 112.0192 112.1781 113.1644 108.9233 109.1644 108.9260 110.4849 110.0795
 [9] 111.1315 109.1370 114.2329 116.4795 113.2877 114.5233 113.9534 113.2000
[17] 112.8685 114.4986 114.5973 113.6301 113.7589 114.9781 115.0329 115.0521
[25] 117.0740 117.7123 119.2932 116.6329 116.6027 114.6466
> mean(xy30)
[1] 113.5754
> var(xy30)
[1] 7.422342
>
> gum.fit(xy30)
$conv
[1] 0

$llh
[1] 74.24725

$mle
[1] 112.18528  2.57222

$se
[1] 0.4985929 0.3495677

> g20<-gum.fit(xy30)
$conv
[1] 0

$llh
[1] 74.24725

$mle
[1] 112.18528  2.57222

$se
[1] 0.4985929 0.3495677

>
> g30<-gev.fit(xy30)
$conv
[1] 0

$llh
[1] 71.904

$mle
[1] 112.6849494  2.7365755 -0.3281594

$se
[1] 0.5493769 0.3929041 0.1151570

>
```

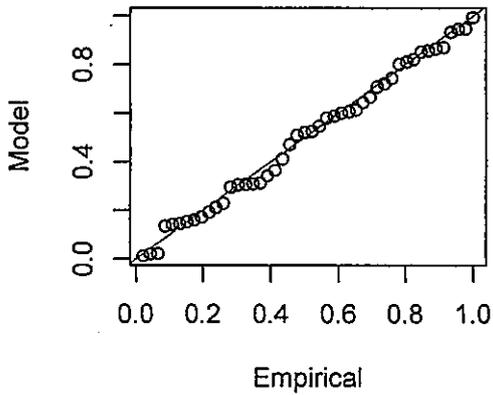
世界 4: 46 95-9- (2012222/32)

平均 114.6631
 分散 7.107322

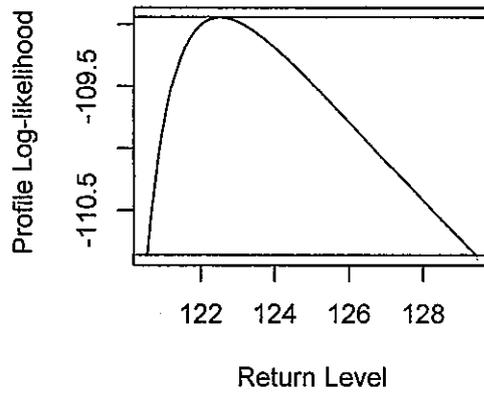
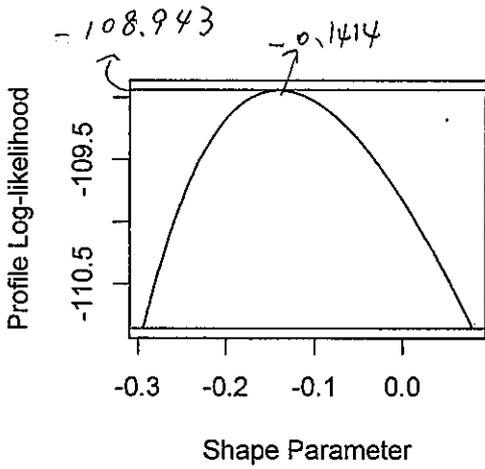
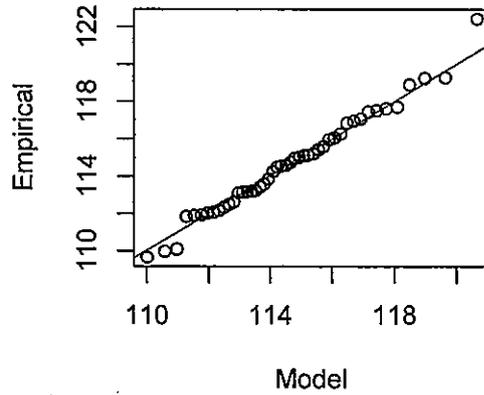
標本平均 μ 113.5789
 標本標準差 σ 2.3937
 $\xi = 0.1414$
 $\xi = 0.0932$

ξ の範囲
 $-0.295 \sim 0.0787$

Probability Plot



Quantile Plot



$\xi = (-0.295, 0.0787)$

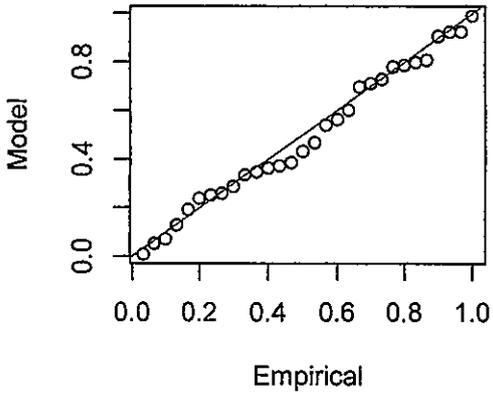
(120.5406 ~ 129.4544)

世帯数 0.71 → (カニ 2.1 / 62). 平均 116.0501
分散 4.560133

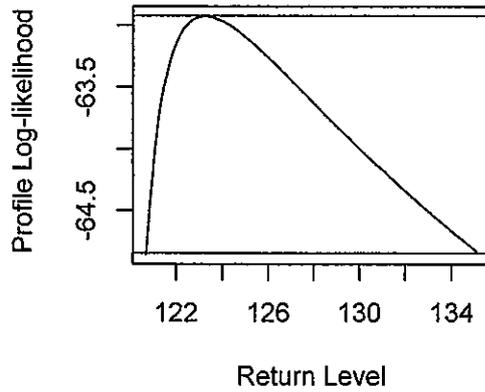
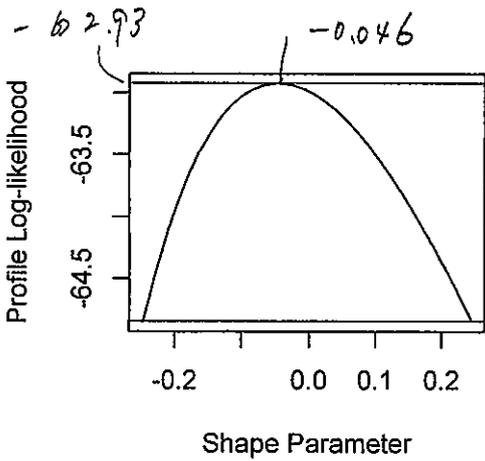
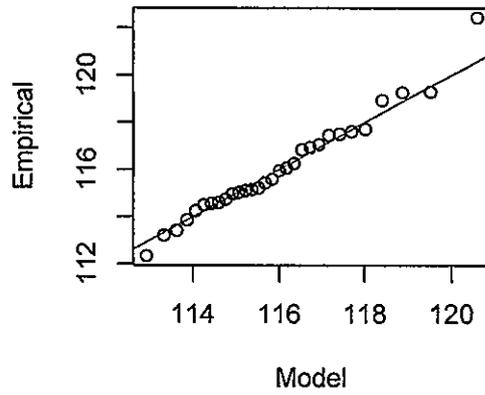
標準偏差

μ 115.1286
 σ 1.7277
 ξ -0.046
 ξ の範囲 -0.249 ~ 0.245
 0.3515
 0.2496
 0.1232

Probability Plot



Quantile Plot



$\xi = (-0.249, 0.245)$

(120.69 ~ 135.08)

1962-2025 (1962-2025)

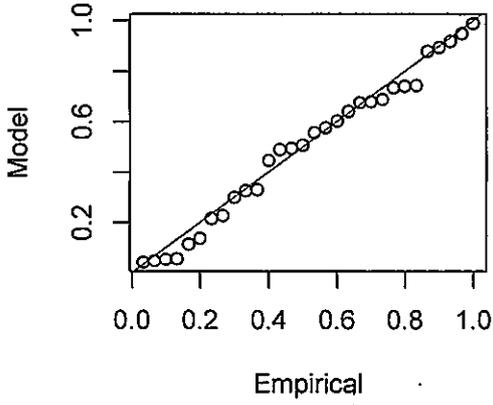
平均 113.5754

分母 7.4223

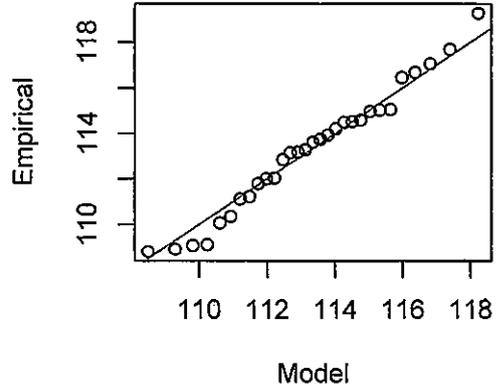
各単位元

μ	σ	ξ
112.6849	2.7368	-0.32815
0.5494	0.3929	0.115157

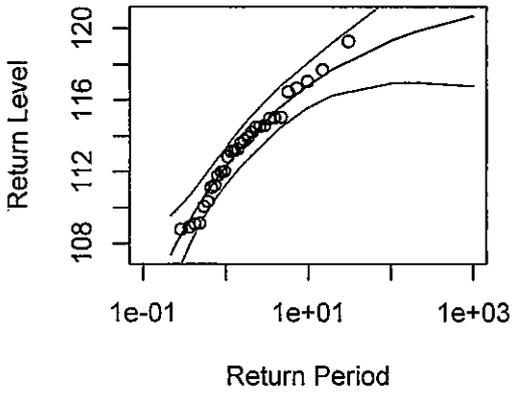
Probability Plot



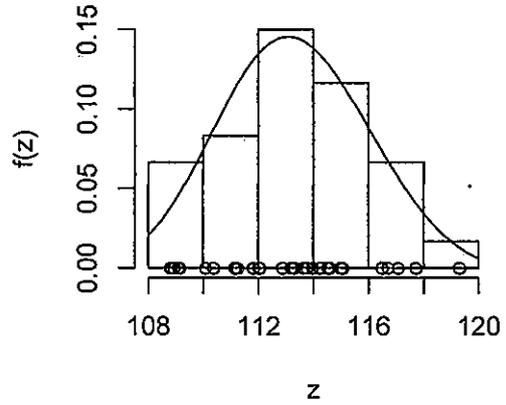
Quantile Plot



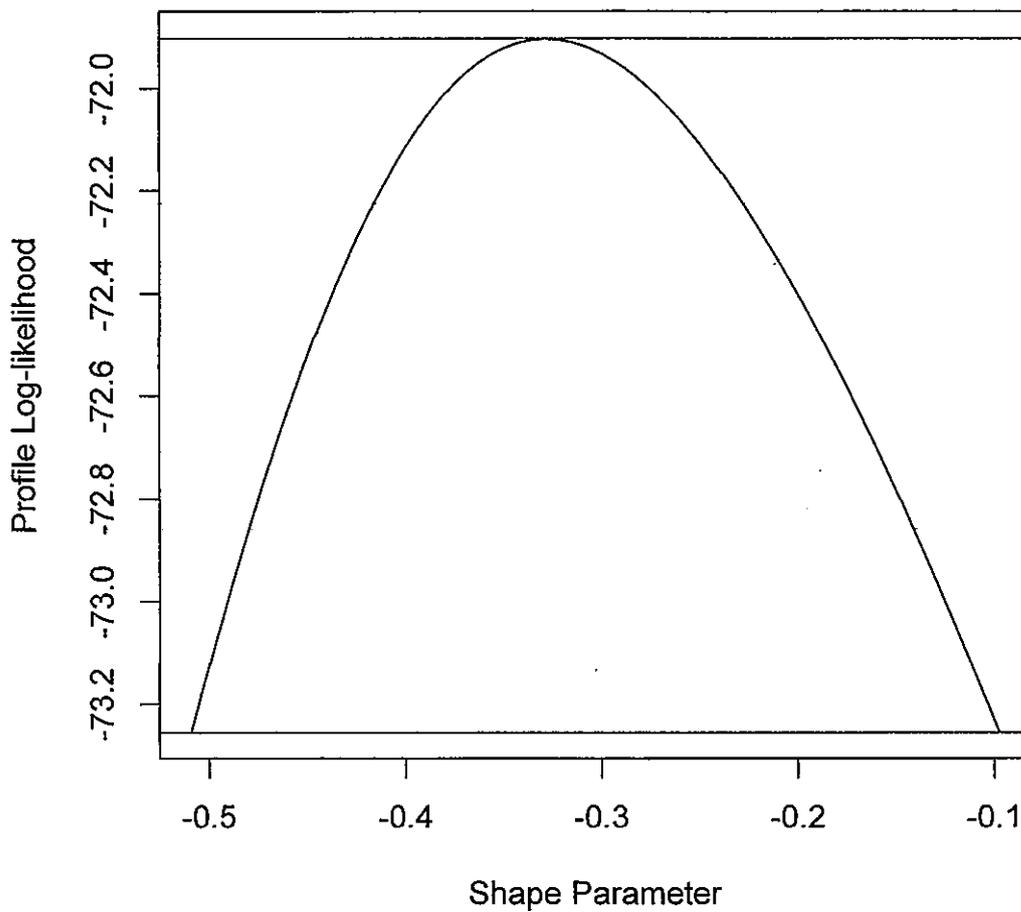
Return Level Plot



Density Plot

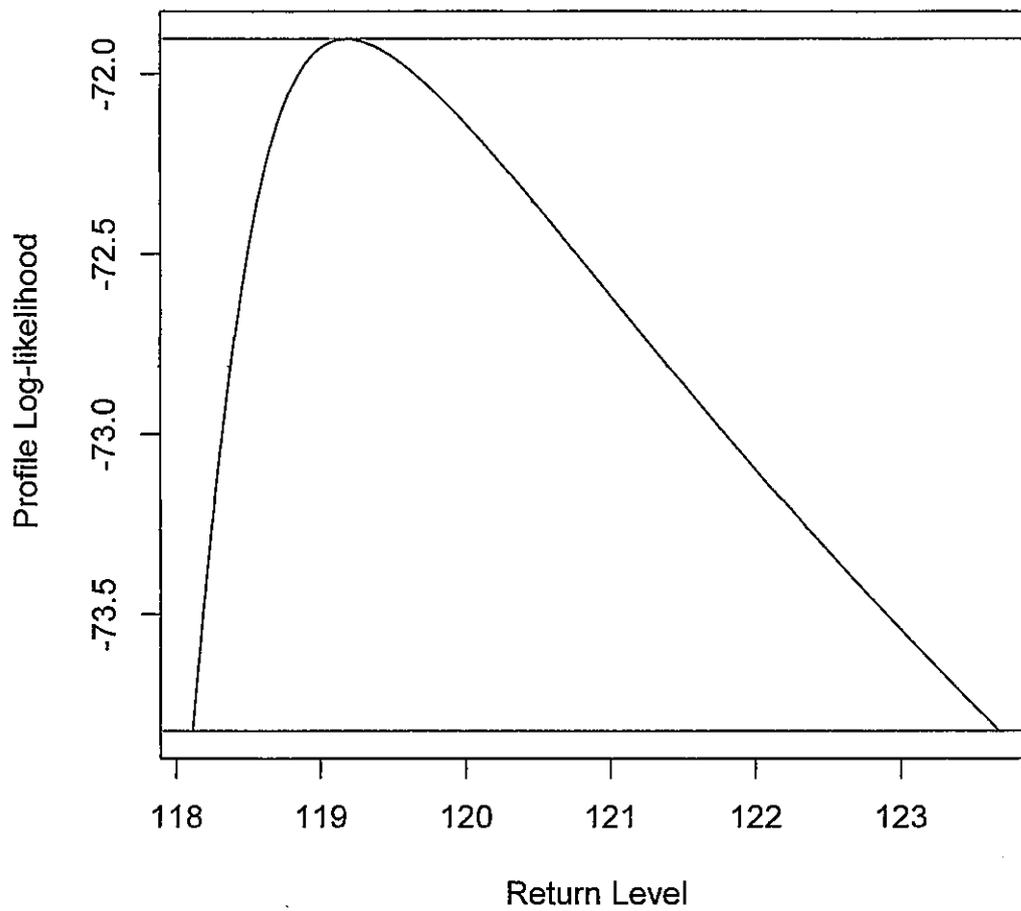


24/1 # 307-9 (1969-2025)



$$\hat{\gamma} = (-0.509, -0.0975)$$

Fig. 1 # 307: + weibull (1969-2025)



118.116 ~ 123.691

水坑 30925 (1969 ~ 2025)

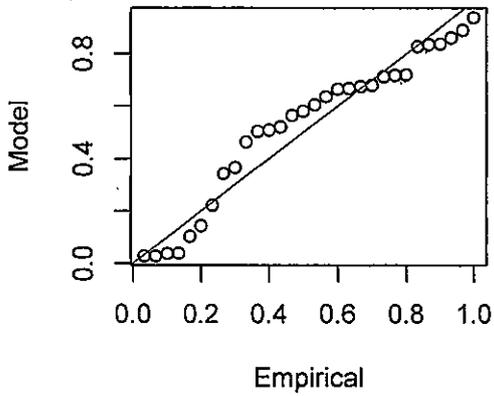
Grumball

拟合偏差

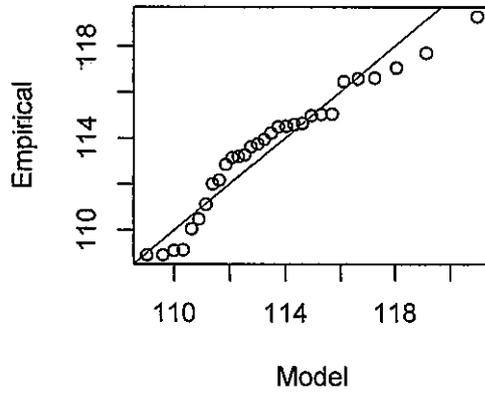
μ
112.1853

σ
2.5722

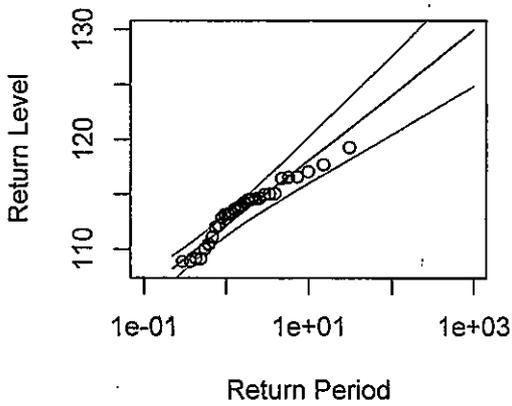
Probability Plot



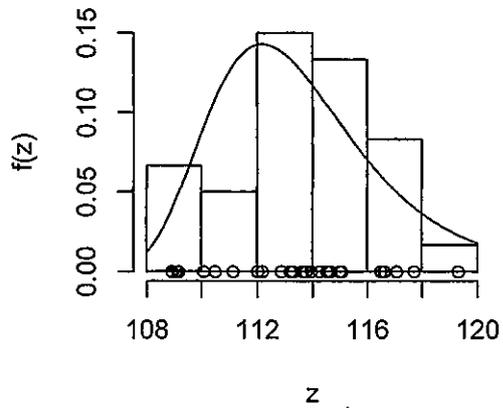
Quantile Plot



Return Level Plot



Density Plot



世帯 2 307-9 (カニズエ/2011) 平均 116.1478

(1) 53.60117

Quantile

分散 2.290106

(11) 標準偏差

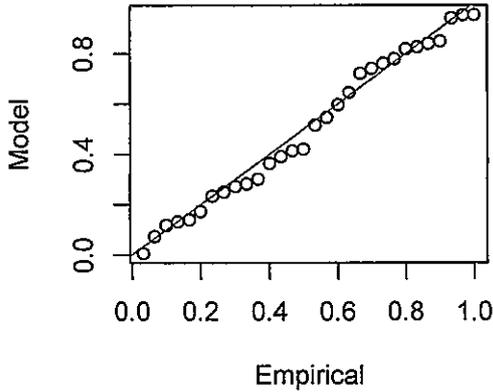
μ 115.442892
 σ 0.2407076

1.249259

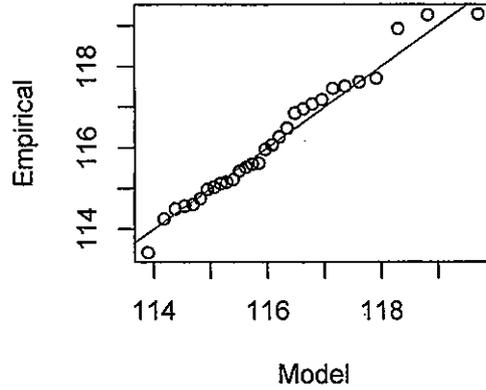
17% 位
121.1897

0.1765005 対応 (1.5 σ)
120.8945

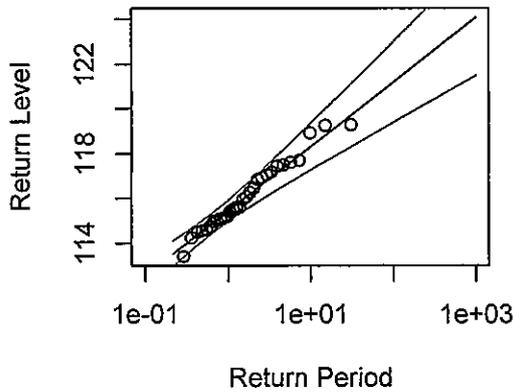
Probability Plot



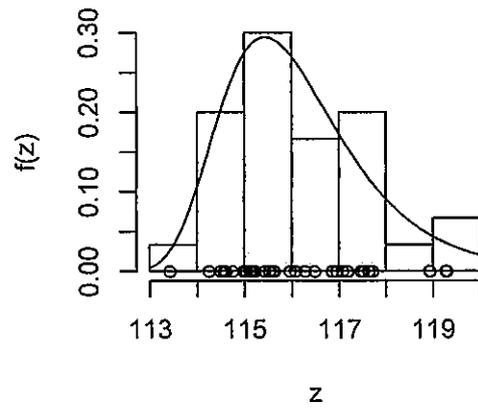
Quantile Plot



Return Level Plot



Density Plot



世帯 2 (カニズエ/2011)

$$\sigma^* = \sigma + 0.123 \cdot \frac{\sqrt{1.1}}{\sqrt{\sigma^2 \text{ 標準偏差}}}$$

$$= 3.0164$$

t分布 a 範囲 0.1765
 1% 位 $\pm t_{0.025}^{30} \times \sigma^*$

$$= 121.198 \pm 2.42 \times 3.0164$$

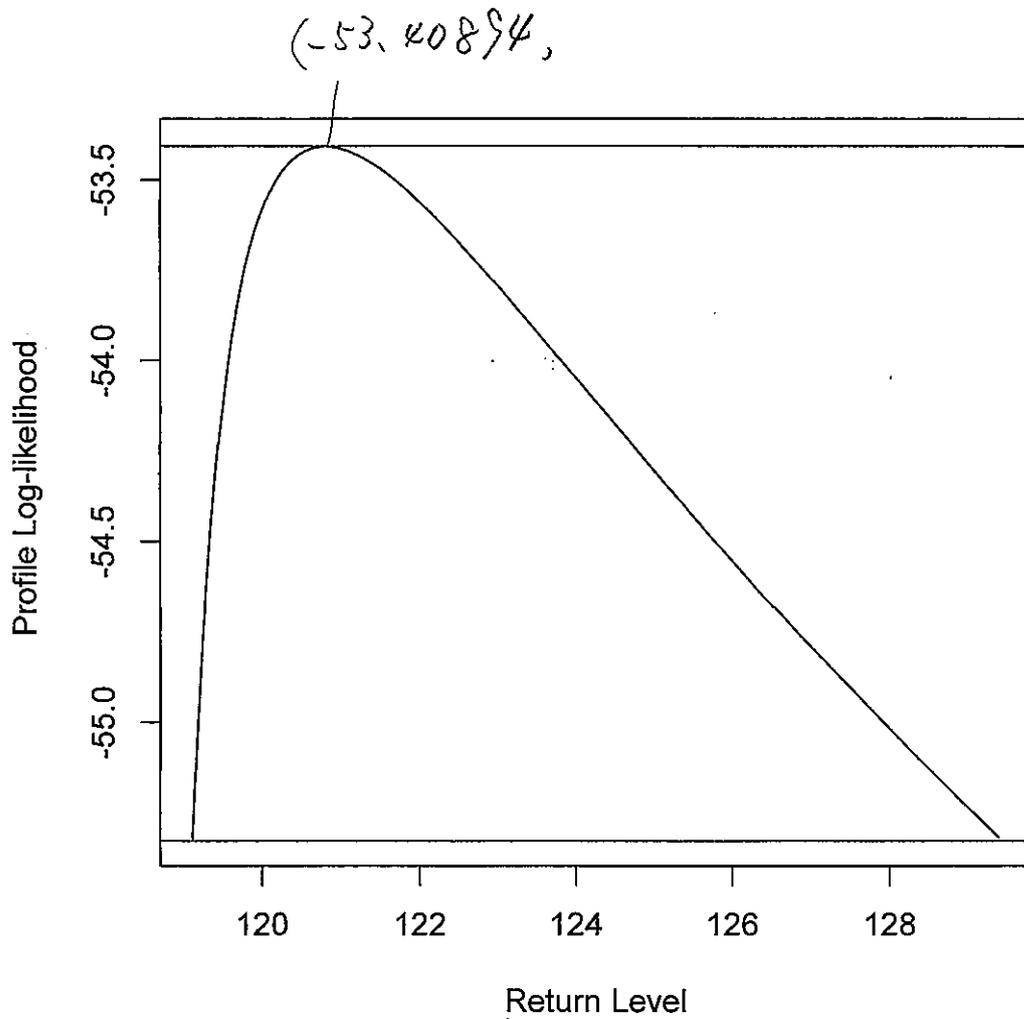
$$= 118.1816 \sim 124.214$$

$$121.198 - 115.442897 = 5.755$$

$$\times (17\% \text{ 位} - \mu)$$

(10)

→ 号 # 303-5 (カニ22E/324)



(119, 108 ~ 129, 406)

*は「保険学雑誌」令和6年9月号666号掲載
 「日本人の寿命限界について」P80
 「日本の歴代最高年齢没年齢」表4との
 相違箇所です。

表4 日本の歴代最高年齢者30名の没年齢(男1965~2024年、女1966~2023年)

男	没年月日	死亡時年齢	1年未満の日数	女	没年月日	死亡時年齢	1年未満の日数	
1	1965/3/2	103.9589	350	1	1996/11/26	111.3151	115 *	
2	1967/2/9	105.7425	271	2	1968/11/14	111.811	296 *	
3	1968/4/6	104.4794	175	3	1969/12/31	112.0192	7	
4	1970/1/26	106.1123	41	4	1975/5/31	112.1781	65 *	
5	1972/1/31	108.0438	16 *	5	1976/11/16	113.1644	80	
6	1973/8/1	107.0767	28	6	1977/5/25	108.9233	337 *	
7	1976/1/2	108.0658	24	7	1979/4/11	109.1644	60 *	
8	1978/10/6	108.7205	263 *	8	1980/4/10	108.926	338	
9	1979/12/30	107.8521	311 *	9	1982/1/10	110.4849	177 *	
10	1982/1/25	109.7288	266	10	1984/2/10	111.0795	29	
11	1983/2/15	107.1534	56	11	1986/5/21	111.1315	48	
12	1985/10/20	108.1808	66	12	1987/3/2	109.137	50	
13	1986/1/7	107.8932	326	13	1992/6/16	114.2329	85 *	
14	1990/1/11	110.9342	341	14	1995/7/12	116.4795	175	
15	1991/6/18	108.7041	257	15	1997/5/4	113.2877	105	
16	1992/2/26	109.0329	12	16	1998/11/18	114.5233	191	
17	1997/1/24	112.2356	86	17	1999/2/12	113.9534	348	
18	1999/4/29	112.5726	209	18	2001/8/14	113.2	73	
19	2000/1/28	111.2466	90	19	2002/1/3	112.8685	317	
20	2003/9/28	114.5178	189	20	2003/11/13	114.4986	182	
21	2004/7/12	109.7534	275 *	21	2005/4/5	114.5973	218	
22	2005/7/3	110.1479	54	22	2007/8/19	113.6301	230	
23	2009/6/119	113.7507	274 *	23	2008/2/22	113.7589	277	
24	2013/6/12	116.1479	54	24	2010/5/2	114.9781	357	
25	2015/7/5	112.411	150	25	2011/12/2	115.0329	12	
26	2016/1/19	112.8548	312	26	2013/1/12	115.0521	19	
27	2019/1/20	113.4904	179	27	2015/4/1	117.074	27	
28	2020/2/23	112.9726	355	28	2018/4/21	117.7123	280	
29	2022/9/9	112.3315	121 *	29	2022/4/19	119.2932	107	
30	2024/3/31	112.4	146 *	30	2023/12/12	116.6329	231 *	
	合計(1~30)	3298.5122			合計(1~30)	3399.1401		
	平均値	109.9504	理論値1σ		平均値	113.3047		
	Average	109.95041	0.9539		Average	113.30467		
	Var	9.4352	1.04836438		Var	7.274453		
死亡年齢	標準偏差	3.07168	Gumbel分布値	1(死亡年齢)	標準偏差	2.69712	Gumbel分布値	1σ
115.674	0.949845	5.724	118.34	gumbel分布	0.051223113	0.950067	5.0353	
115.68138	0.949995	-0.00212	118.335	位置母数	0.051345043	0.949951	0.635	
115.6816	0.95	-0.0019	118.3371	尺度母数	0.051293797	0.95	0.6371	
115.6835	0.950038	0	117.7	尺度母数	0.069443814	0.9329	0	
118.613576	0.985	2.93	120.39712	尺度母数	0.0124368	0.9376	2.69712	
119.5854	0.999	121.765	2.394		0.010049924	0.99		

2024.12.29, 116.66027 220.0
 2025.5.20, 114.6466 276

Gumbell
 112.18528
 0.4985929
 0.3495697

2024年没