

第十二周上机作业

翁俊

December 8, 2020

第一部分：当取的区间为 $[-1,1]$ 时，其分布归一化后为：

$$f(x) = \frac{3}{2 \times (3 + \beta)} (1 + \alpha x + \beta x^2)$$

最终的拟合结果如图：

```

PARAMETER CORRELATION COEFFICIENTS
NO. GLOBAL 1 2
1 0.68038 1.000 0.680
2 0.68038 0.680 1.000
*****
** 4 **MINOS
*****
FCN=5788.14 FROM MINOS STATUS=SUCCESSFUL 50 CALLS 106 TOTAL
EDM=1.24104e-07 STRATEGY= 1 ERROR MATRIX ACCURATE
EXT PARAMETER PARABOLIC MINOS ERRORS
NO. NAME VALUE ERROR NEGATIVE POSITIVE
1 beta 1.00668e+00 8.25195e-02 -8.08503e-02 8.42499e-02
2 alpha 1.03338e+00 4.24599e-02 -4.19401e-02 4.29979e-02
beta = 1.00668 +/- 0.0825195
alpha = 1.03338 +/- 0.0424599
log_l = -2894.07

```

Figure 1: 区间为 $[-1,1]$ 时的拟合结果

第二部分：当取的区间为 $[-0.95, 0.95]$ 时，其分布归一化后为：

$$f(x) = \frac{3}{5.7 + 2 \times \beta \times 0.95^3} (1 + \alpha x + \beta x^2)$$

最终的拟合结果如图：

```

PARAMETER CORRELATION COEFFICIENTS
NO. GLOBAL 1 2
1 0.65971 1.000 0.660
2 0.65971 0.660 1.000
*****
** 4 **MINOS
*****
FCN=54083.7 FROM MINOS STATUS=SUCCESSFUL 37 CALLS 90 TOTAL
EDM=9.84229e-07 STRATEGY= 1 ERROR MATRIX ACCURATE
EXT PARAMETER PARABOLIC MINOS ERRORS
NO. NAME VALUE ERROR NEGATIVE POSITIVE
1 beta 1.00490e+00 2.76256e-02 -2.74357e-02 2.78192e-02
2 alpha 1.00369e+00 1.35283e-02 -1.34760e-02 1.35810e-02
beta = 1.0049 +/- 0.0276256
alpha = 1.00369 +/- 0.0135283
log_l = -27041.9

```

Figure 2: 区间为 $[-0.95, 0.95]$ 时的拟合结果