第五章

5-1

lambda, v lambda max

(12.254305619329665, array(-0.67402131], [1.], [-0.88955722))

(98.52169757881232, array(-0.60397234], [1.], [-0.25113513], [0.14895345))

5-3

不收敛 反复跳动 因为特征值为{-1,1} 使Ak+1 = QAkQ

其中Q=[

-1 0 0 0

0 -1 0 0

0 0 1 0

0 0 0 1

]

-1.00000000e+00 5.43343148e-13 0.00000000e+00 2.44471110e-13] [0.00000000e+00
-1.00000000e+00 4.57411886e-14 2.12496687e-13] [0.00000000e+00 0.00000000e+00
1.00000000e+00 1.30784272e-13] [0.00000000e+00 0.00000000e+00 0.00000000e+00
1.00000000e+00

1. 1. 1. 1.] [1. 1. -1. -1.] [1. -1. 1. -1.] [1. -1. -1. 1.

-1.00000000e+00 5.37181410e-13 -1.33226763e-15 -2.27928787e-13] [0.00000000e+00
-1.00000000e+00 -2.87547763e-14 -2.13717932e-13] [0.00000000e+00 0.00000000e+00
1.00000000e+00 1.36890499e-13] [0.00000000e+00 0.00000000e+00 0.00000000e+00
1.00000000e+00

1. 1. -1. -1.] [1. 1. 1. 1.] [-1. 1. 1. -1.] [-1. 1. -1. 1.

-1.00000000e+00 5.43398659e-13 1.11022302e-16 2.44804177e-13] [0.00000000e+00
-1.00000000e+00 4.52970994e-14 2.12274642e-13] [0.00000000e+00 0.00000000e+00
1.00000000e+00 1.30784272e-13] [0.00000000e+00 0.00000000e+00 0.00000000e+00
1.00000000e+00

1. 1. 1. 1.] [1. 1. -1. -1.] [1. -1. 1. -1.] [1. -1. -1. 1.

-1.00000000e+00 5.37236922e-13 -1.44328993e-15 -2.28261854e-13] [0.00000000e+00
-1.00000000e+00 -2.86437540e-14 -2.13606910e-13] [0.00000000e+00 0.00000000e+00
1.00000000e+00 1.36890499e-13] [0.00000000e+00 0.00000000e+00 0.00000000e+00
1.00000000e+00

1. 1. -1. -1.] [1. 1. 1. 1.] [-1. 1. 1. -1.] [-1. 1. -1. 1.

5-4

进行了三轮迭代，比5-3有效

-0.5 0.67082039 -0.43915503 -0.32732684] [0.67082039 0.7 0.1963961 0.14638501] [-0.43915503
0.1963961 0.87142857 -0.09583148] [-0.32732684 0.14638501 -0.09583148 0.92857143

-9.99085923e-01 -3.49002346e-02 2.01537540e-02 -1.42519421e-02] [-3.49002346e-02
9.99390708e-01 3.51846179e-04 -2.48811778e-04] [2.01537540e-02 3.51846179e-04

9.99796820e-01 1.43680736e-04] [-1.42519421e-02 -2.48811778e-04 1.43680736e-04 9.99898395e-01
-1.00000000e+00 1.77406154e-06 -1.02425491e-06 -7.24257593e-07] [1.77406155e-06 1.00000000e+00 9.08502010e-13 6.42338248e-13] [-1.02425491e-06 9.08519140e-13 1.00000000e+00 -3.70844164e-13] [-7.24257593e-07 6.42441521e-13 -3.70933897e-13 1.00000000e+00
[-1. 1. 1. 1.]