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算法框图：

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代码部分：

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| #include<stdio.h>  #include<math.h>  #define a 0  #define b 1  #define e 1.e-15  //此处直接define了a/b/e，具体可根据求解情况改变  double fai(double x) {  //定点法求x=0.25\*exp(x)，具体可根据求解情况设定  return 0.25 \* exp(x);  }  double function(){  //封装好的埃特金加速法，调用fai()函数  int i;  double x0 = (a + b) / 2, x1, x2, x, y, d;  x1 = fai(x0);  for (i = 0; i < 64; i++) {  x2 = fai(x1);  if (fabs(x2 - x1) < e) {  printf("Totally %d times.\n", i);  printf("We got the answer: %.16lf", x2);  return 1;  }  d = x2 - 2 \* x1 + x0;  if (fabs(d) > 1.e-20) {  x = (x0 \* x2 - x1 \* x1) / d;  y = fai(x);  if (fabs(x - y) < e) {  printf("Totally %d times.\n", i);  printf("We got the answer: %.16lf", x2);  return 1;  }  }  x0 = x1;  x1 = x2;  }  }  int main() {  function();  return 0;  } |

测试结果：

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| 当采用区间[0,1]，收敛容差为1e-15，采用fai(x)为0.25\*exp(x)时，得到以下结果。 |
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