

满足边界条件时

$$\lambda_2 = \lambda_3 = 0$$

$$\text{即 } \beta = -\alpha T$$

$$\gamma = \frac{1}{2}\alpha T^2$$

带入到

$$J = \gamma^2 + \beta\gamma T + \frac{1}{3}\beta^2 T^2 + \frac{1}{3}\alpha\gamma T^2 + \frac{1}{4}\alpha\beta T^3 + \frac{1}{20}\alpha^2 T^4$$

得到

$$J = \frac{1}{20}\alpha^2 T^2$$

再带入到矩阵中

得到

$$J = 20 * \frac{(P_f - P_0 - V_0 T - \frac{1}{2}a_0 T^2)^2}{T^6}$$

接下来将函数放到matlab中来解