



204

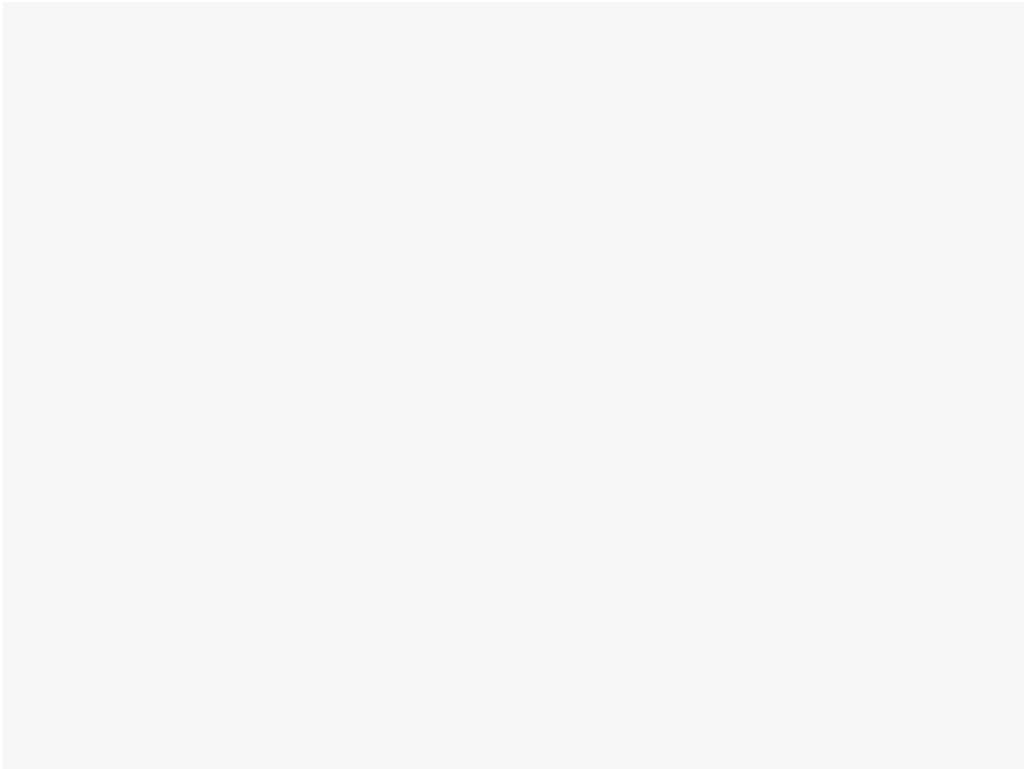
Lagrange

$$\begin{aligned} \max_{\mathbf{x}} f(\mathbf{x}) \quad \text{s.t.} \quad & g_k(\mathbf{x}) = 0, \quad k = 1, 2, \dots, K \quad (1) \\ & \mathbf{x} = (x_1, x_2, \dots, x_N) \in \mathbb{R}^N \quad f, g_1, g_2, \dots, g_K \in \mathbb{R} \end{aligned}$$

$$\begin{aligned} \mathbf{x}^* & \quad \lambda_1, \lambda_2, \dots, \lambda_K \\ \nabla f(\mathbf{x}^*) &= \sum_{k=1}^K \lambda_k \nabla g_k(\mathbf{x}^*) \quad (2) \\ & \quad \mathbf{x}_1, \mathbf{x}_2, \dots, \mathbf{x}_N, \lambda_1, \lambda_2, \dots, \lambda_K \quad 12 \\ \mathbf{x}^* & \quad \nabla f(\mathbf{x}^*) \quad K \quad \nabla g_1(\mathbf{x}^*), \nabla g_2(\mathbf{x}^*), \dots, \nabla g_K(\mathbf{x}^*) \end{aligned}$$

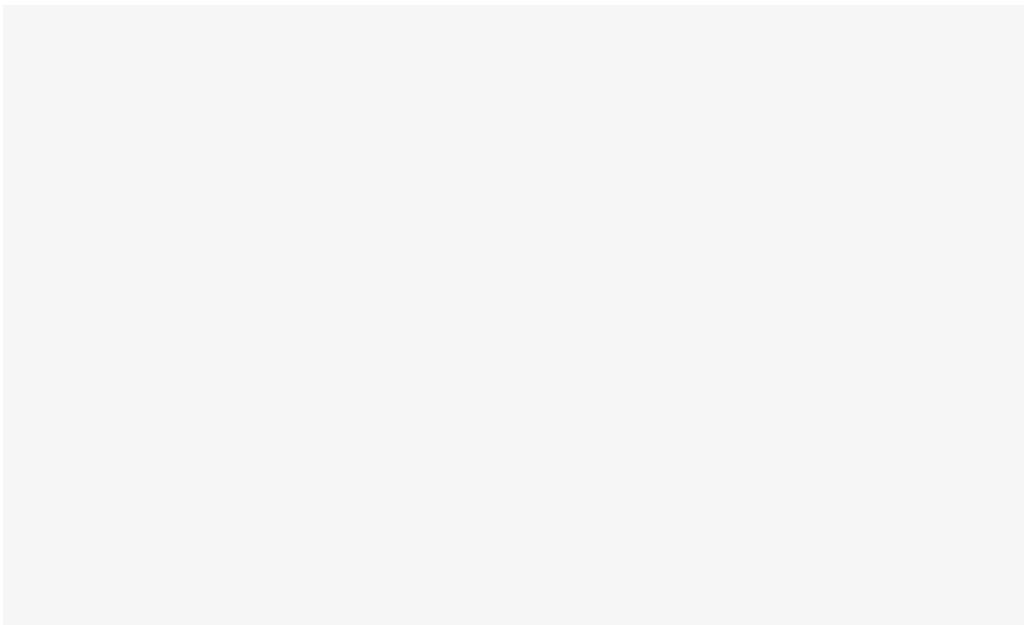
1

1.  $R^N$
2.  $g_k(x) = 0$
3.  $x$
4.  $f(x)$
5.  $x$   $f(x)$
6.  $x$
7.  $K = 1$   $K = 2$



2

- 1.
2. BIU
3.  $x^*$   $g_k(x) = 0$   $x^*$   $x$   $x^*$   $x$
4.  $\nabla g_k(x^*)$   $g_k(x) = 0$   $x^*$   $x$   $\Delta x = x - x^*$
5.  $K$   $\Delta x = x - x^*$   $K$   $\nabla g_1(x^*), \nabla g_2(x^*), \dots, \nabla g_K(x^*)$
6.  $K = 2$



### 3

- 1.
2.  $x^* \quad x^* \quad \Delta x = x - x^*$
3.  $\nabla f(x^*)$
4.  $\nabla f(x^*)$
5. 2  $\nabla g_1(x^*), \nabla g_2(x^*), \dots, \nabla g_K(x^*)$
6.  $\nabla f(x^*) \quad \nabla g_1(x^*), \nabla g_2(x^*), \dots, \nabla g_K(x^*)$

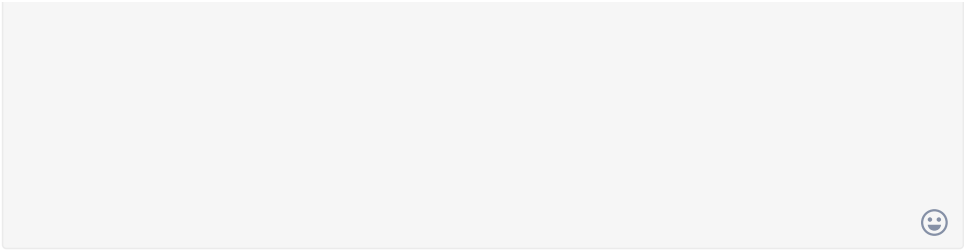
$K = 1$

2018-04-03



'''





1

👍 2

1

👍 13

zeagle

1

👍 4

1

👍 9

1

👍 4

Chaos

1

👍

Jerry

1

K=1

👍

() Jerry

1

👍

11

👍

()

11

👍 1

jacobian

17

df=0

👍

() jacobian

17