

The background of the slide is a faded image of the Jiaotong University gate. The gate is a large, white, curved structure with the university's name in English, "JIAOTONG UNIVERSITY", on the right side and in Chinese, "交通大学", on the left side. The gate is flanked by trees and a building with a red roof. A large, dark purple rectangular box is superimposed over the center of the image, containing the title "作业6" in yellow text.

## 作业6

2021-2022学年第2学期

## 作业6

1. (教材115页, 习题第8题计算部分) 取 $\mathbf{x}_0 = 0$ , 用基于精确线性搜索的FR共轭梯度法求解问题:

$$\min f(\mathbf{x}) = x_1^2 + 4x_2^2 - 4x_1 - 8x_2$$

2. (教材115页, 习题第9题) 当采用强Wolfe线性搜索且 $\sigma < 1$ 时, 用共轭下降公式得到的方向为下降方向。
3. 用DFP方法求解:

$$\min f(\mathbf{x}) = x_1^2 - x_1x_2 + x_2^2 + 2x_1 - 2x_2$$

初始点 $\mathbf{x}_0 = (2, 2)^T$ , 初始矩阵取单位矩阵。