



武汉大学

Wuhan University



# 《摄影测量原理与应用》

(含当代摄影测量)

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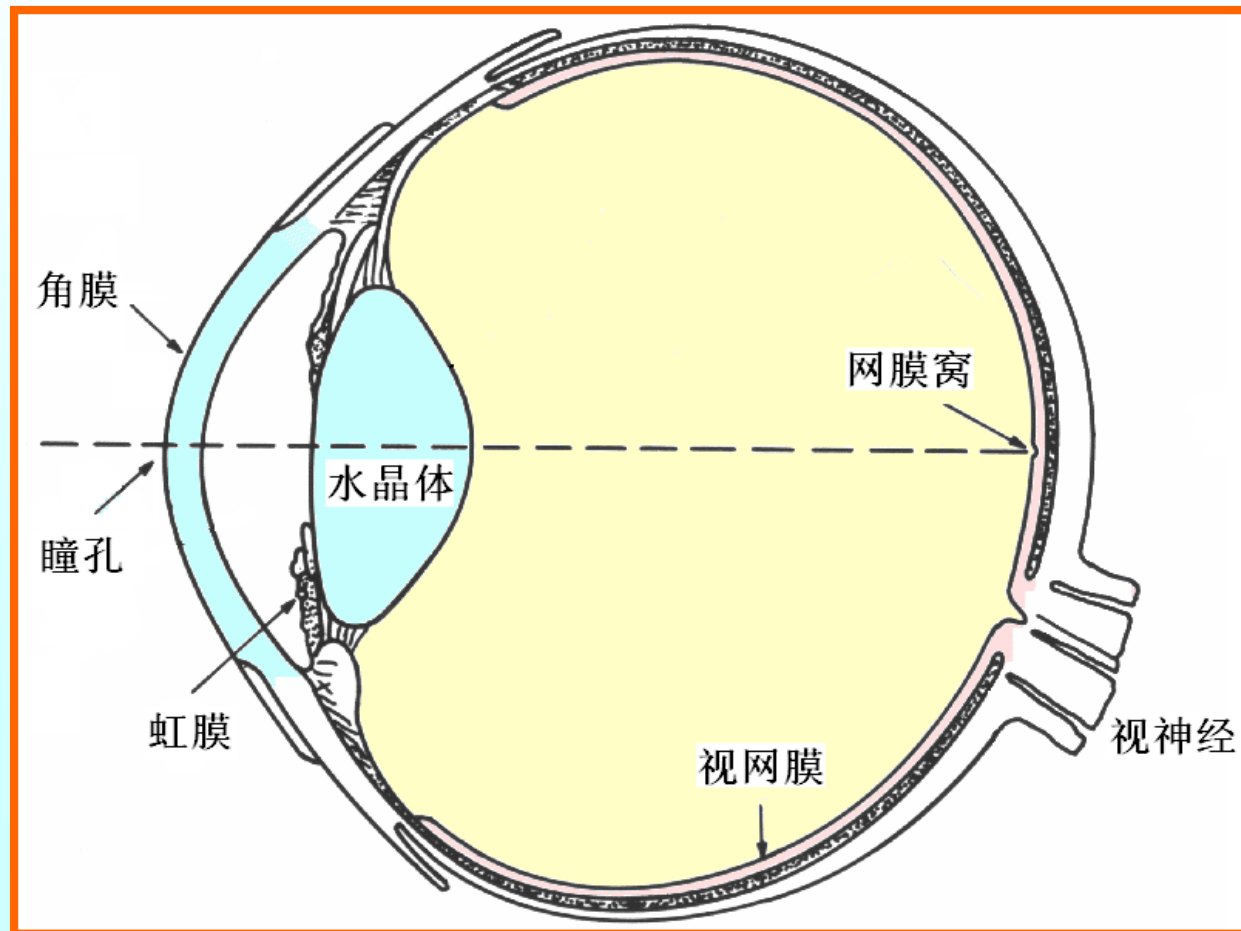
# 第3章

## 立体测图的原理与方法



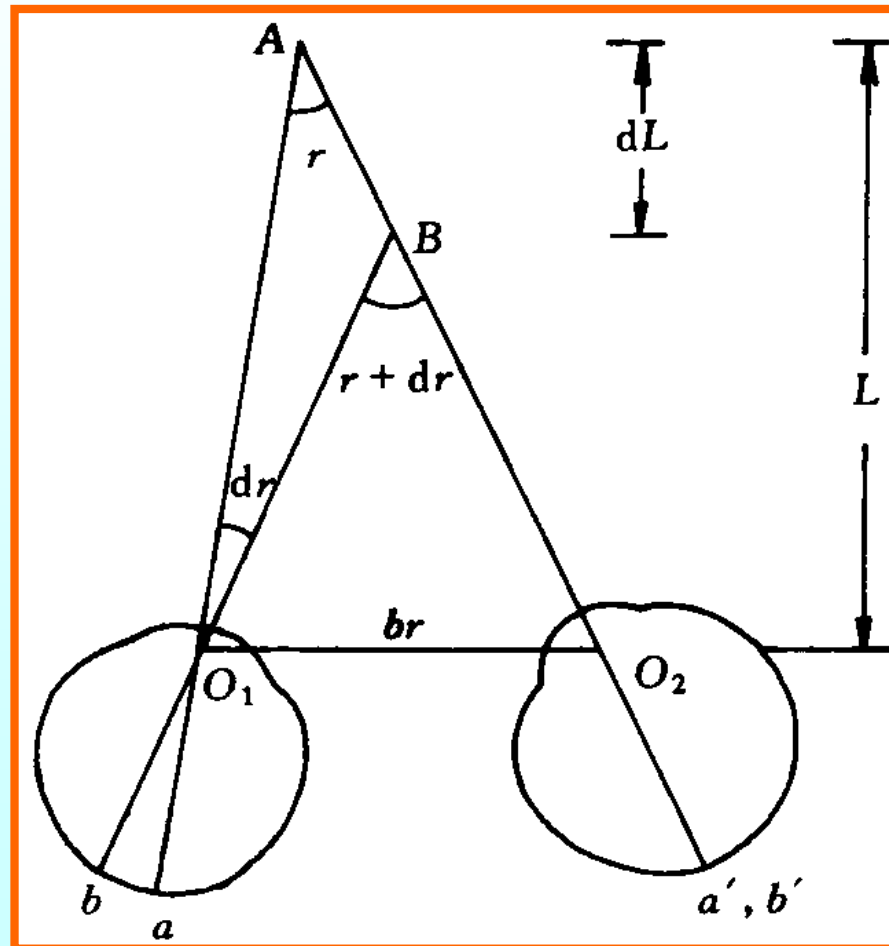
# 视差与立体视觉原理

## Q 人眼相当于一架照相机



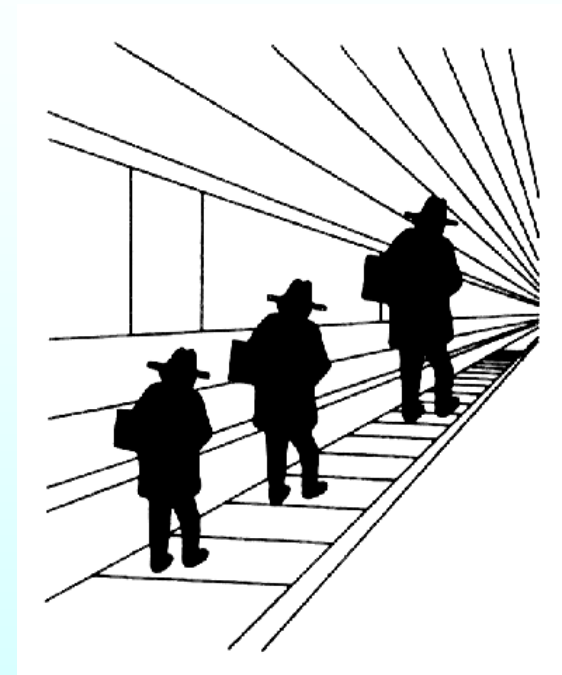
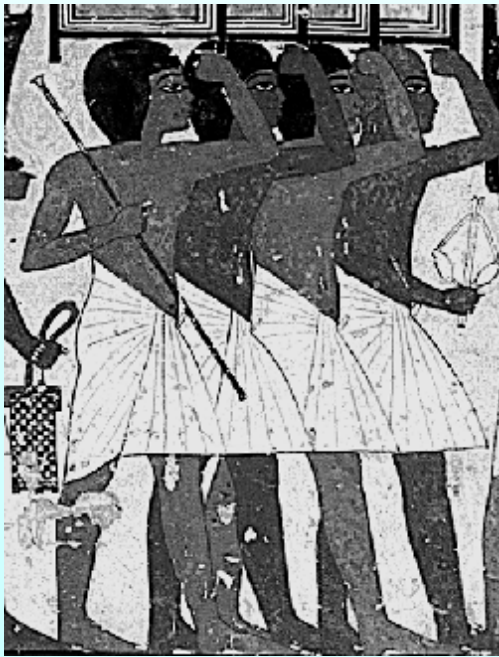
# 视差与立体视觉原理

## q 人眼的立体视觉



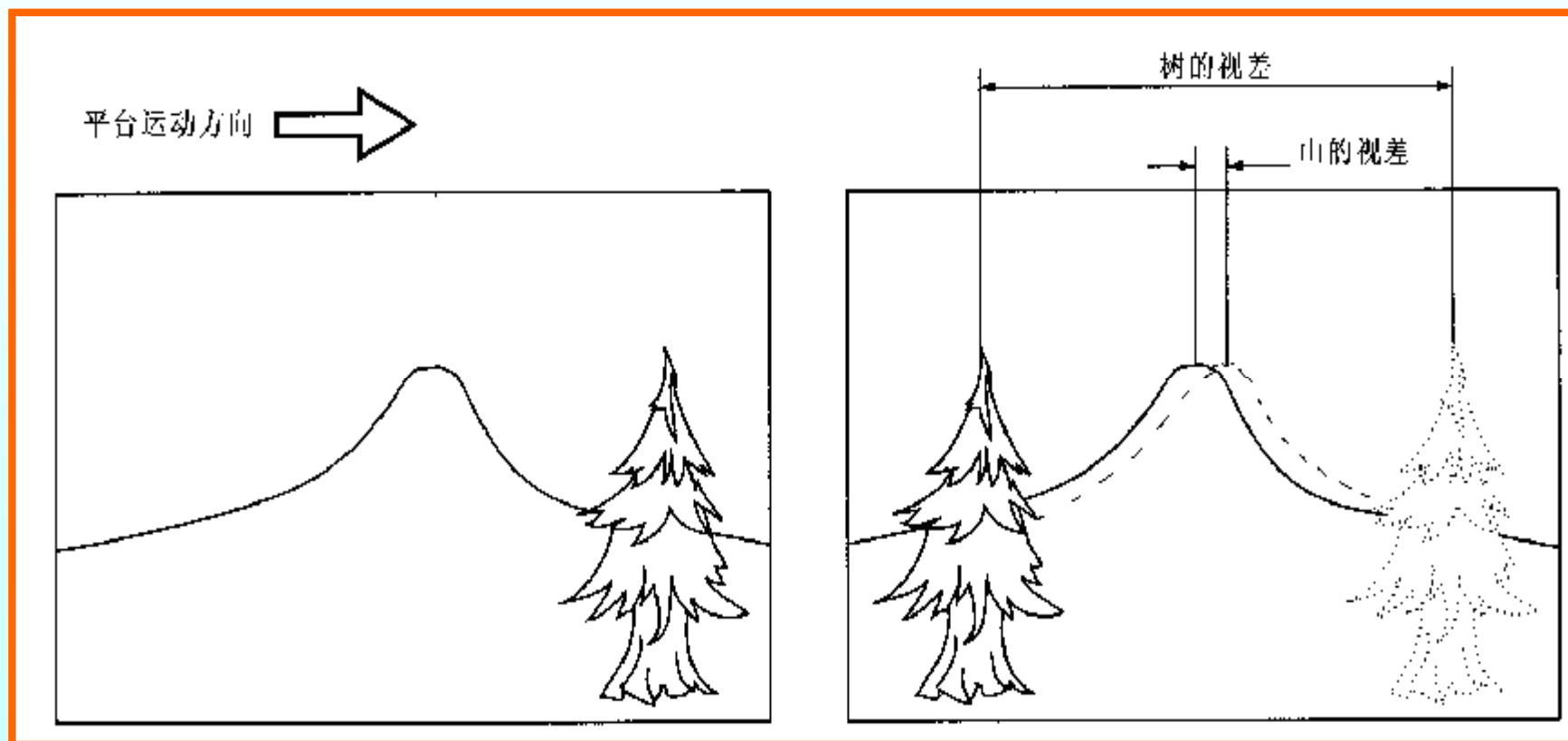
# 视差与立体视觉原理

问：单眼是如何产生立体感的？



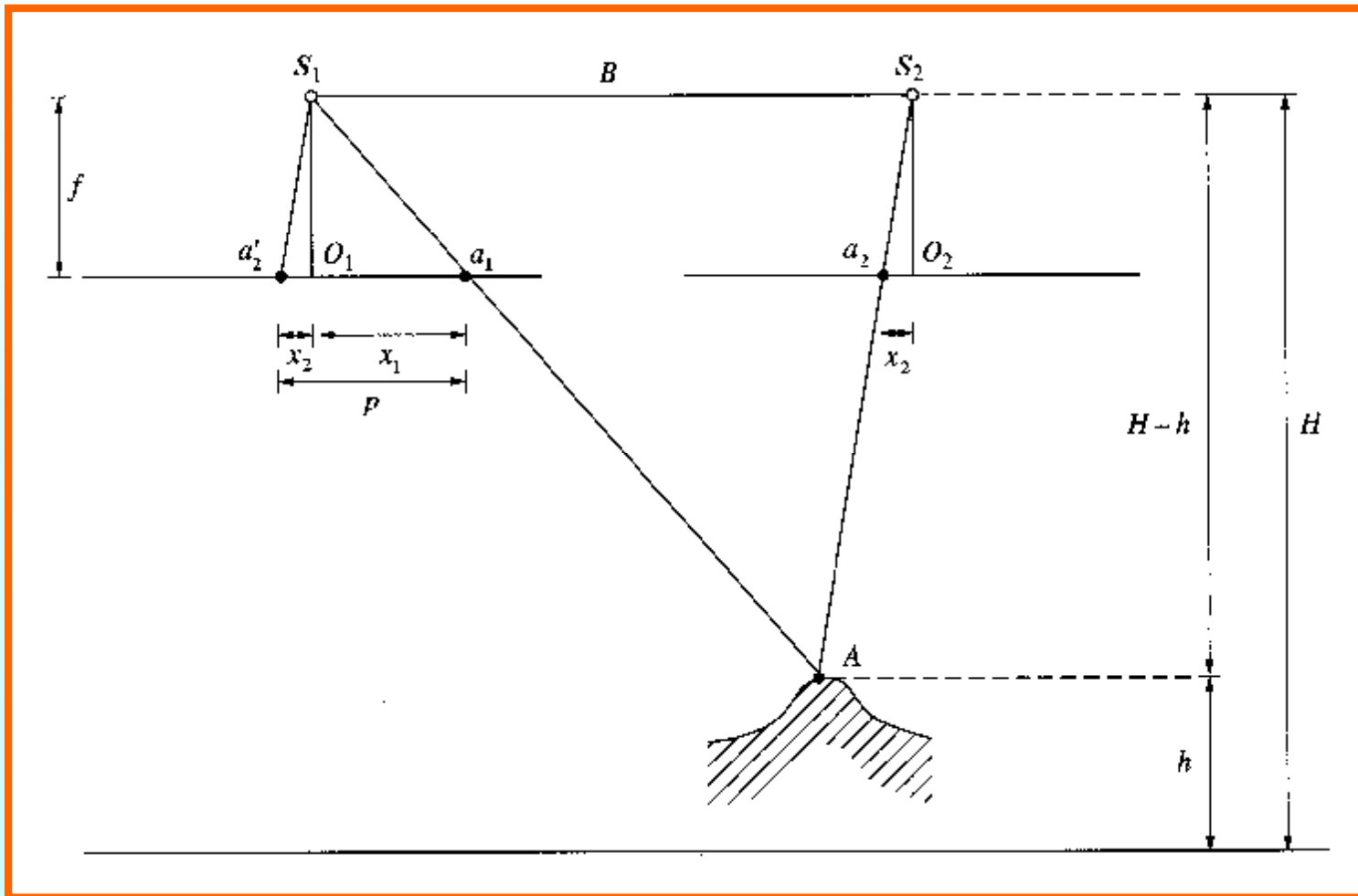
# 视差与立体视觉原理

## Q 视差的概念



# 视差与立体视觉原理

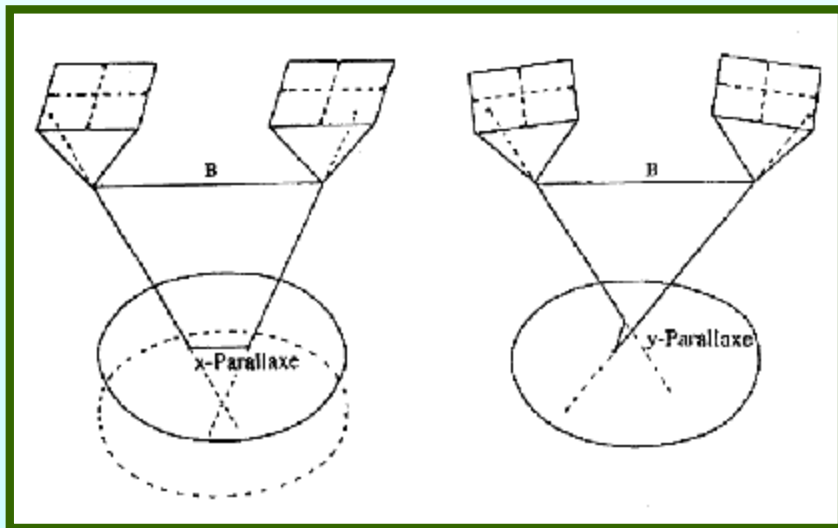
## Q 视差的概念



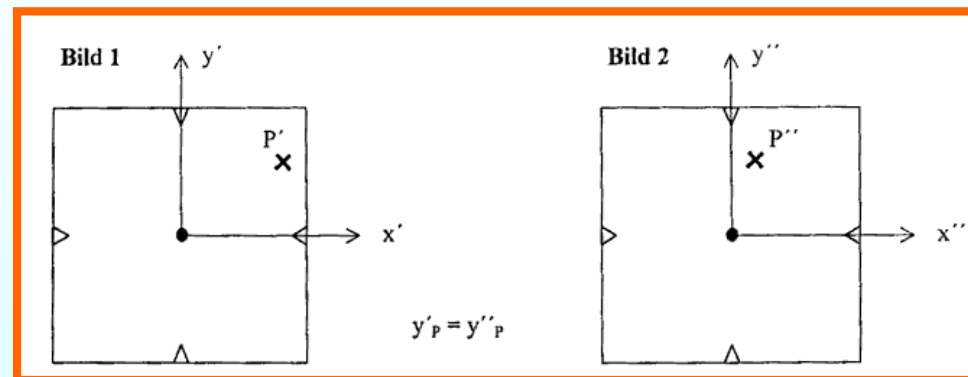
# 视差与立体视觉原理

## Q 视差的概念

## 在立体像对上



在模型上



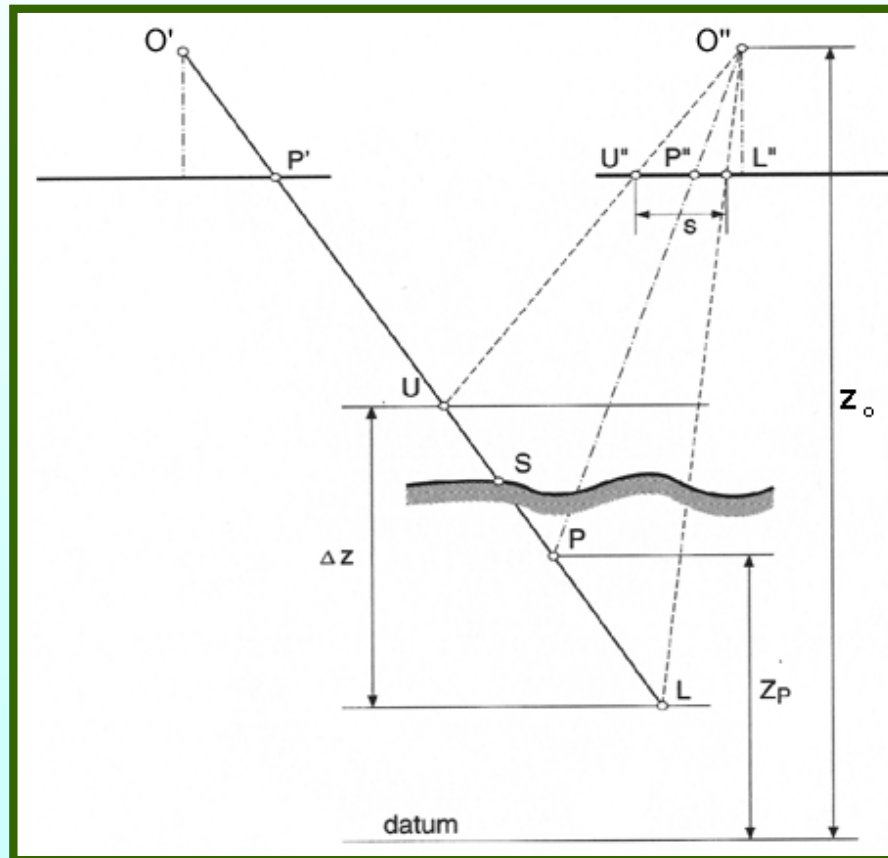
$$p_x = x_{left} - x_{right}$$

$$p_y = y_{left} - y_{right}$$



# 视差与立体视觉原理

## Q 视差的概念

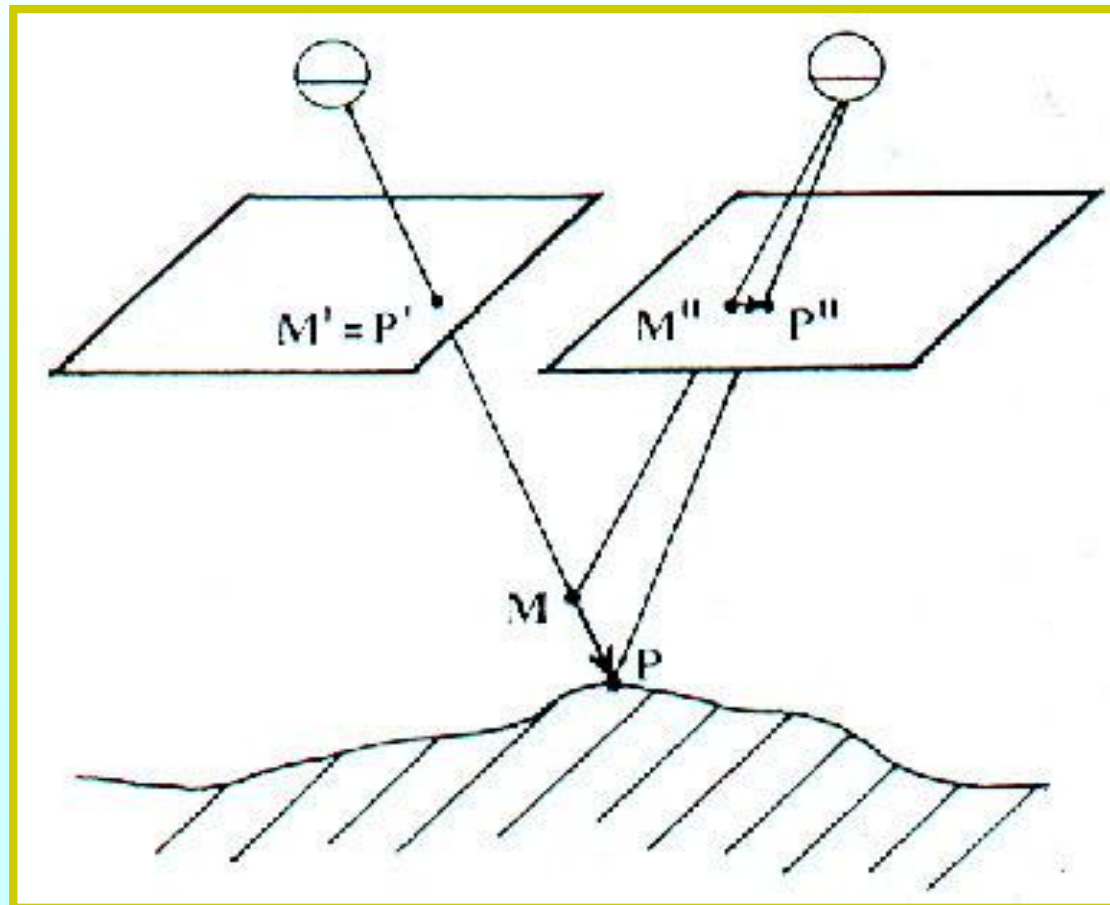


两个重要特性:

- 1) 地面上任何一点在像片上视差的大小与这一点的高程有关;
- 2) 地面上越高处, 在像片上的视差就越大

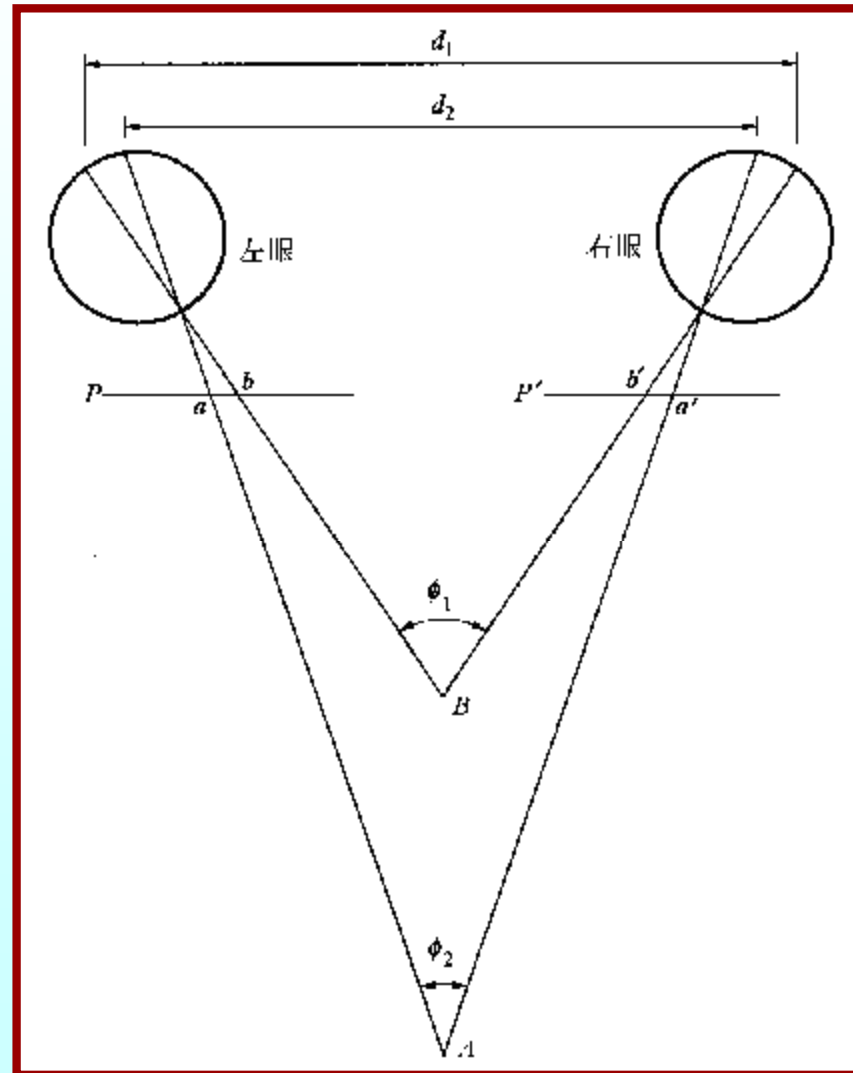
# 视差与立体视觉原理

q 人眼的立体视觉是立体测图的基础



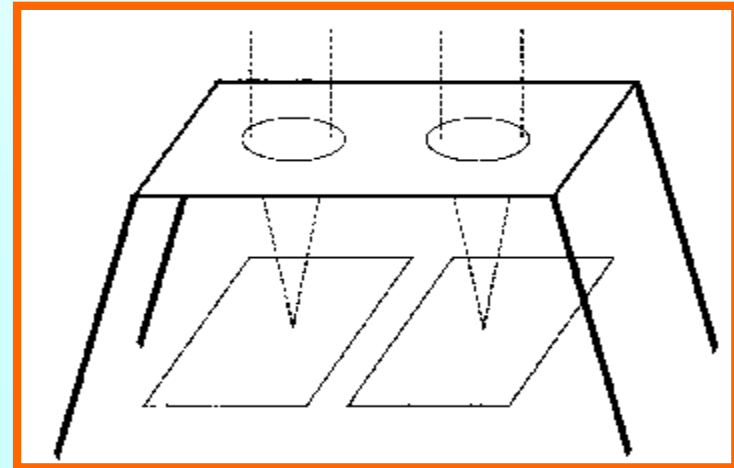
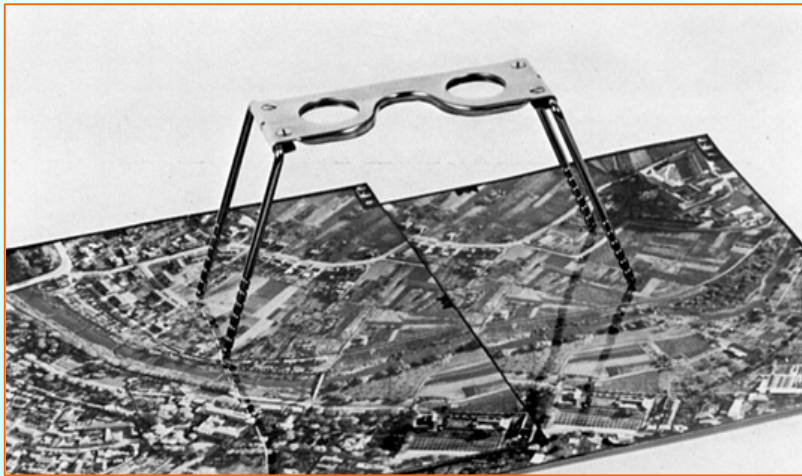
# 视差与立体视觉原理

## q 人造立体视觉



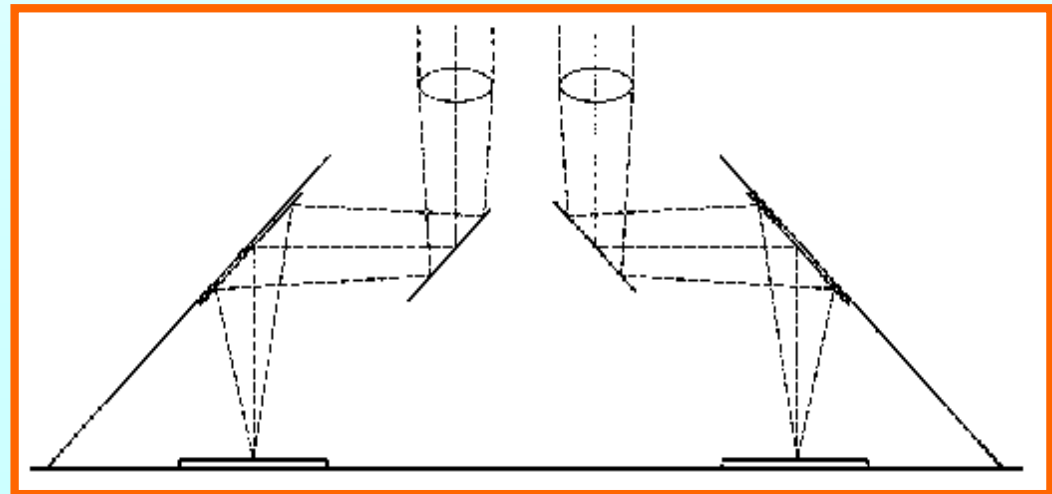
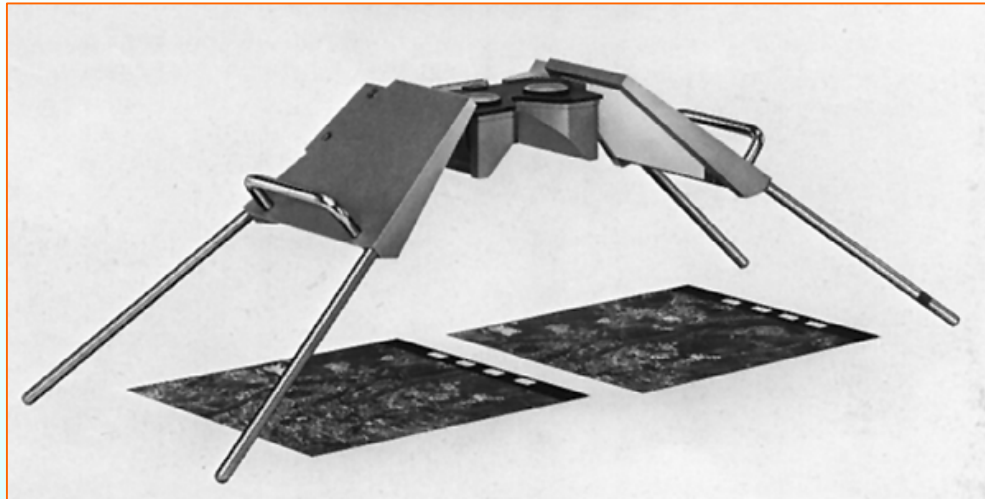
# 像对的立体观察与量测

- q 对纵深/距离/高度的判断，立体观测优于单目观测
- q 分像(一只眼睛看一张像片)



# 像对的立体观察与量测

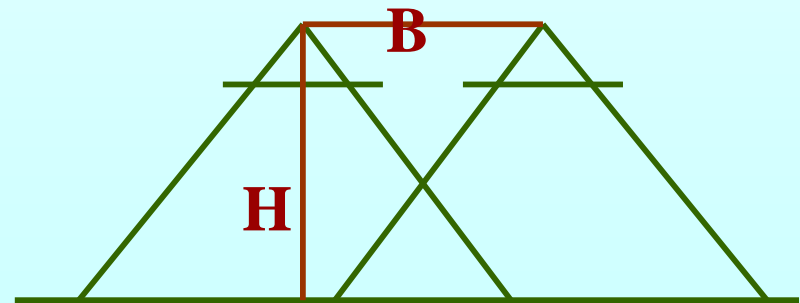
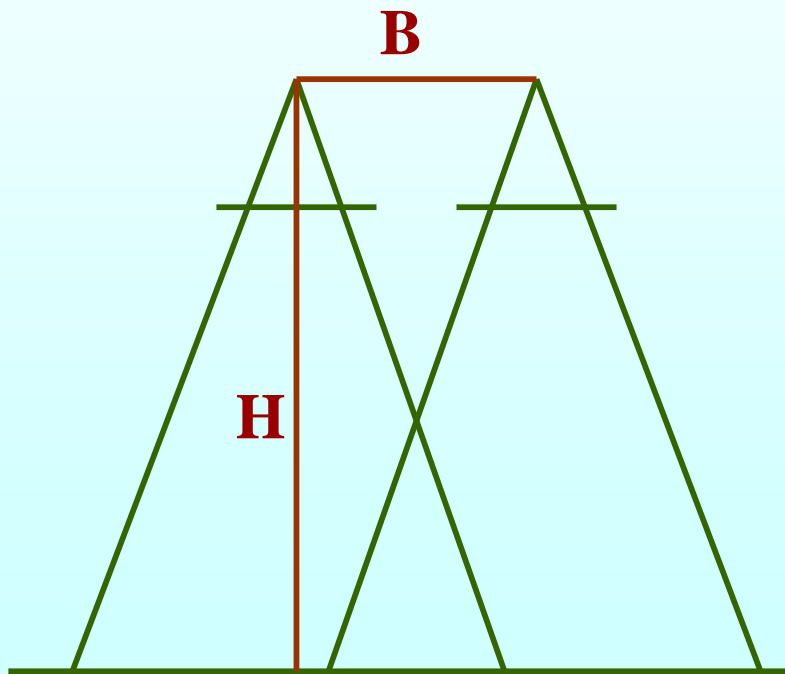
q 基/高比大，有利于提高立体观测的精度



# 像对的立体观察与量测

q 高程夸张(基/高比增大)

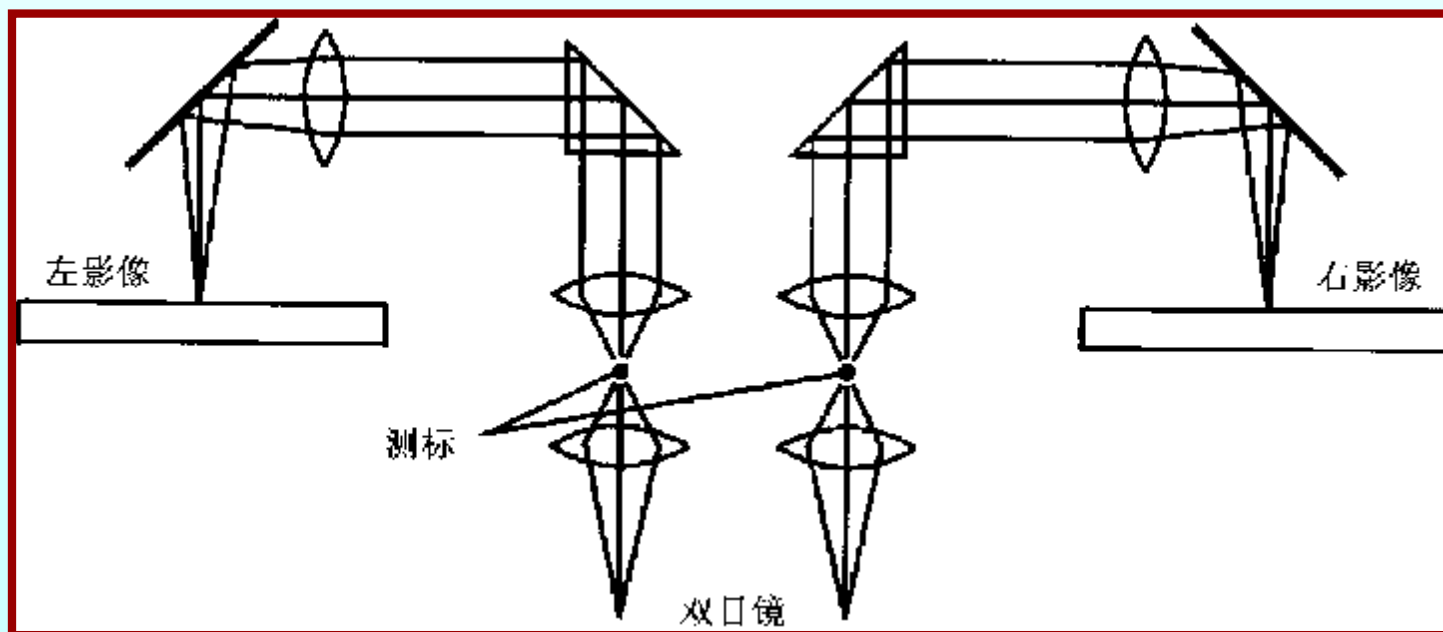
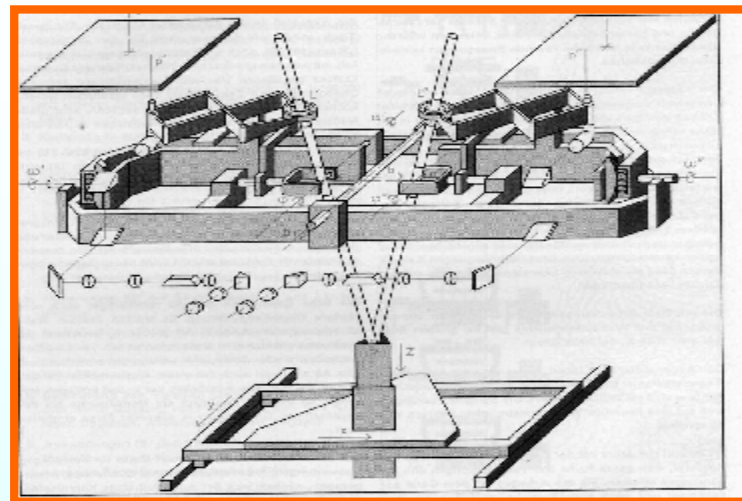
$$p_a = f \frac{B}{H_A}$$



# 像对的立体观察与量测

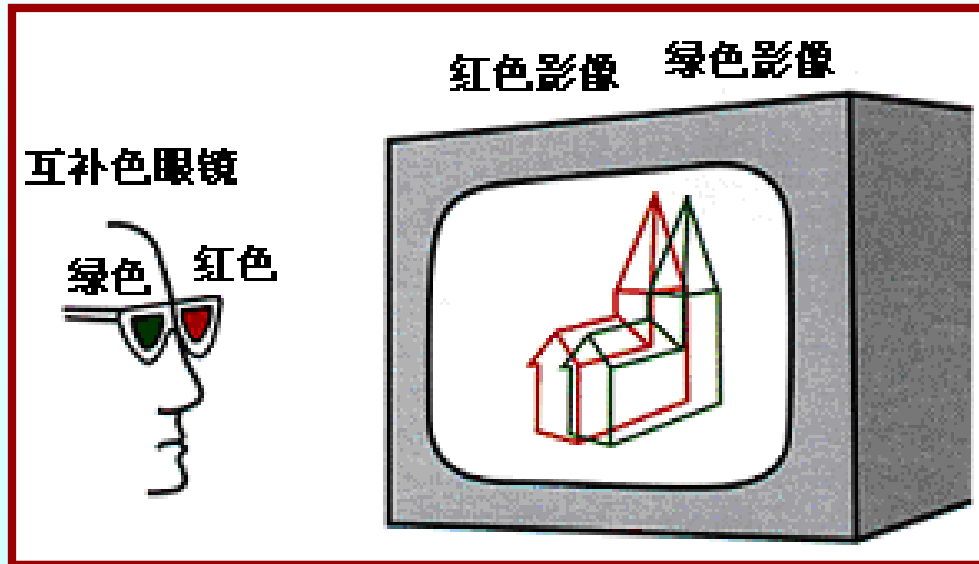
## Q分像方法

### 分光路法

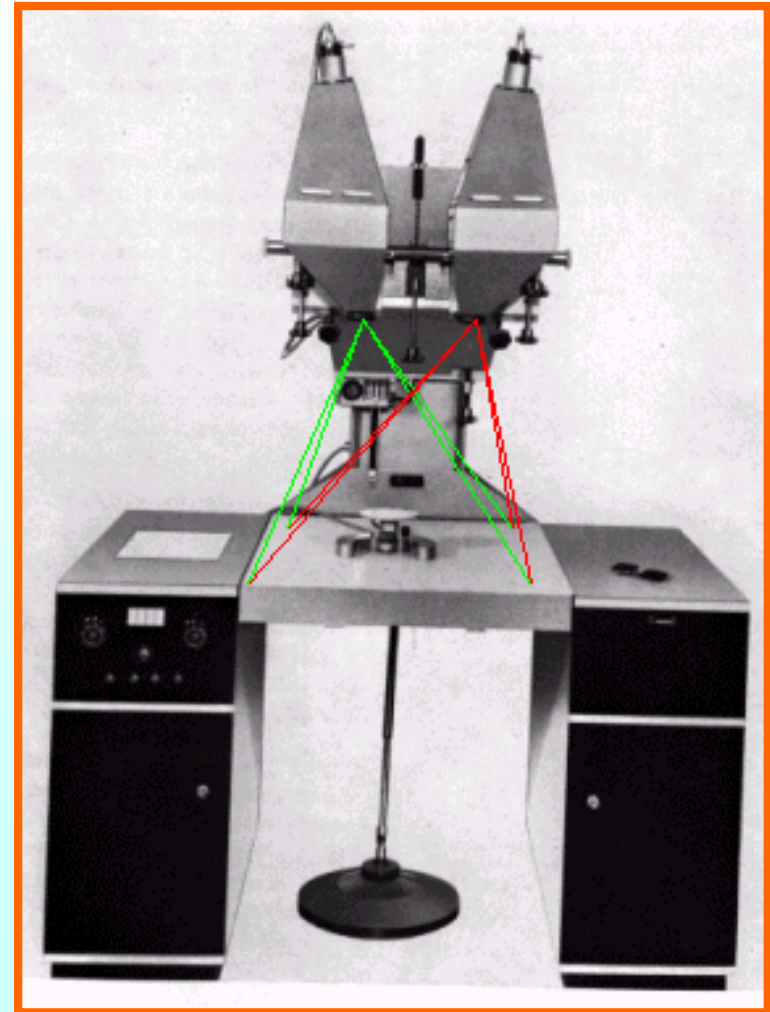


# 像对的立体观察与量测

## Q 分像方法



## 互补色法





# 像对的立体观察与量测

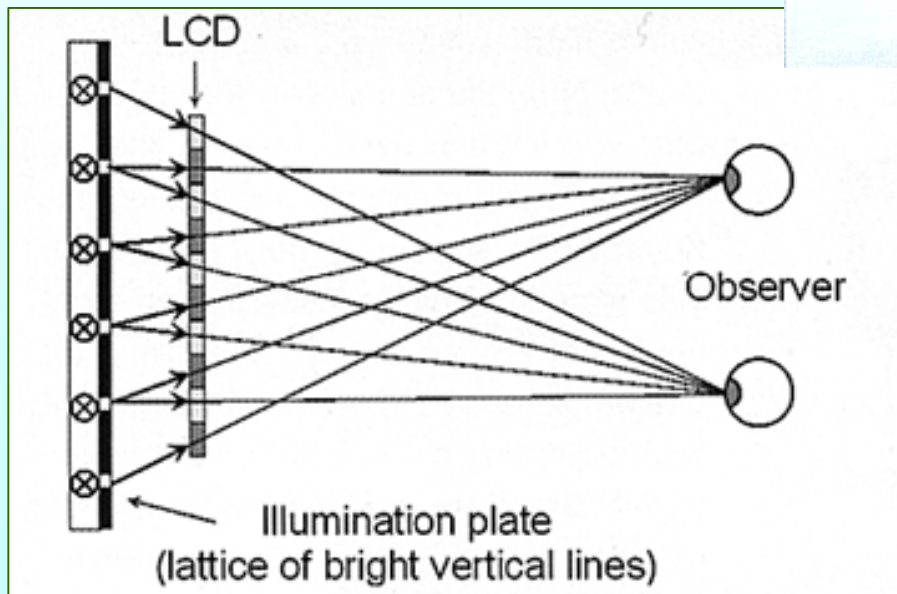
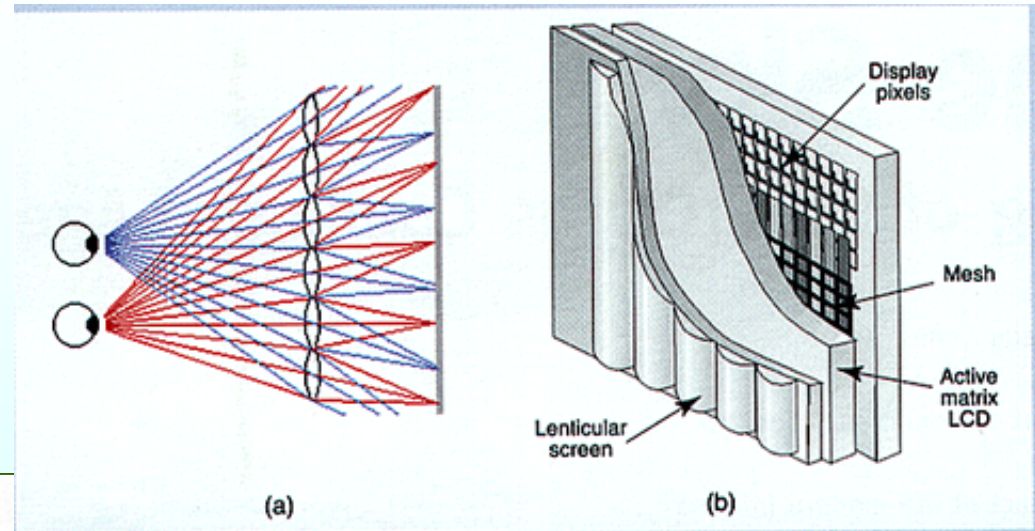
## Q分像方法



光栅法、偏振光法

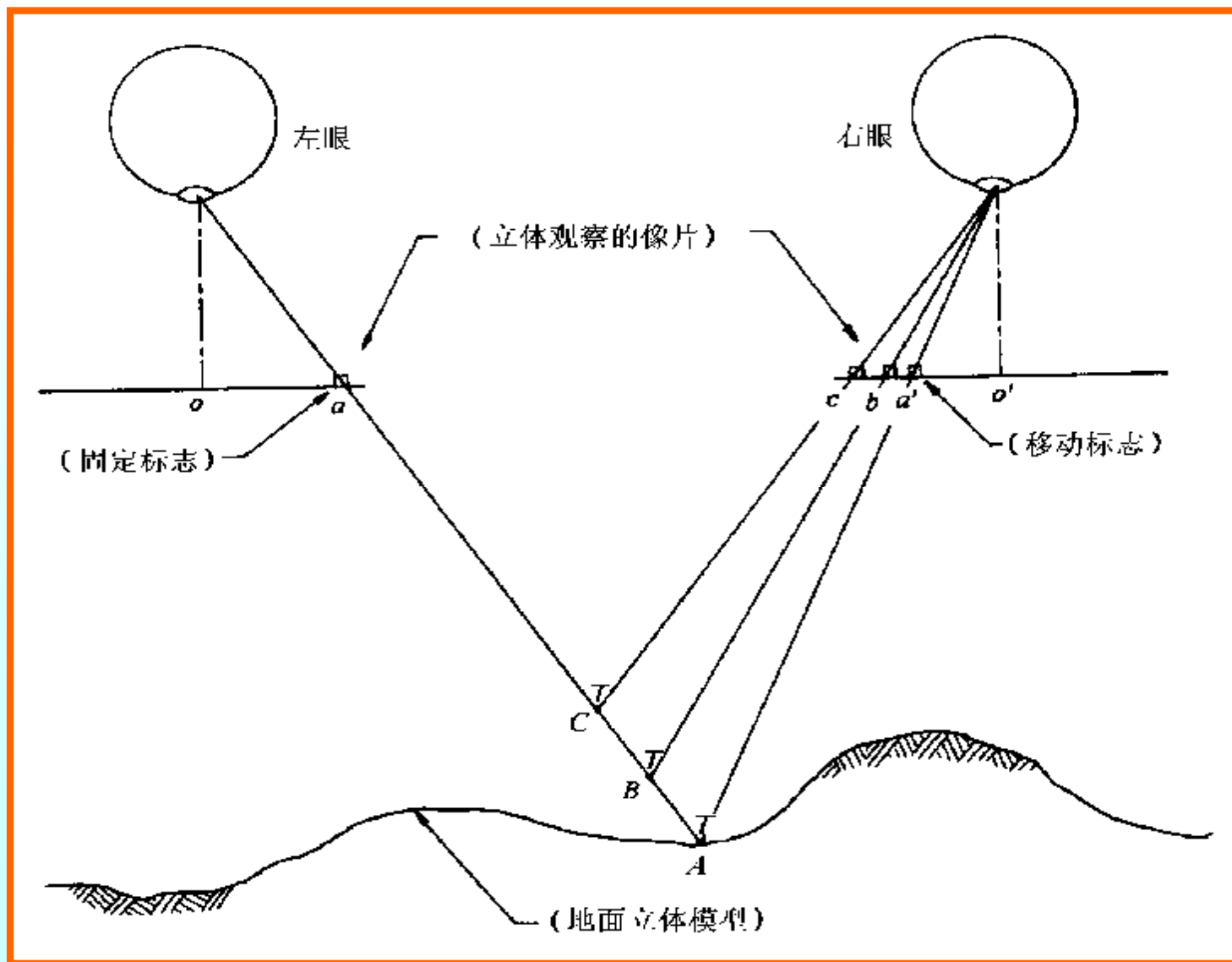
# 像对的立体观察与量测

## 分像方法

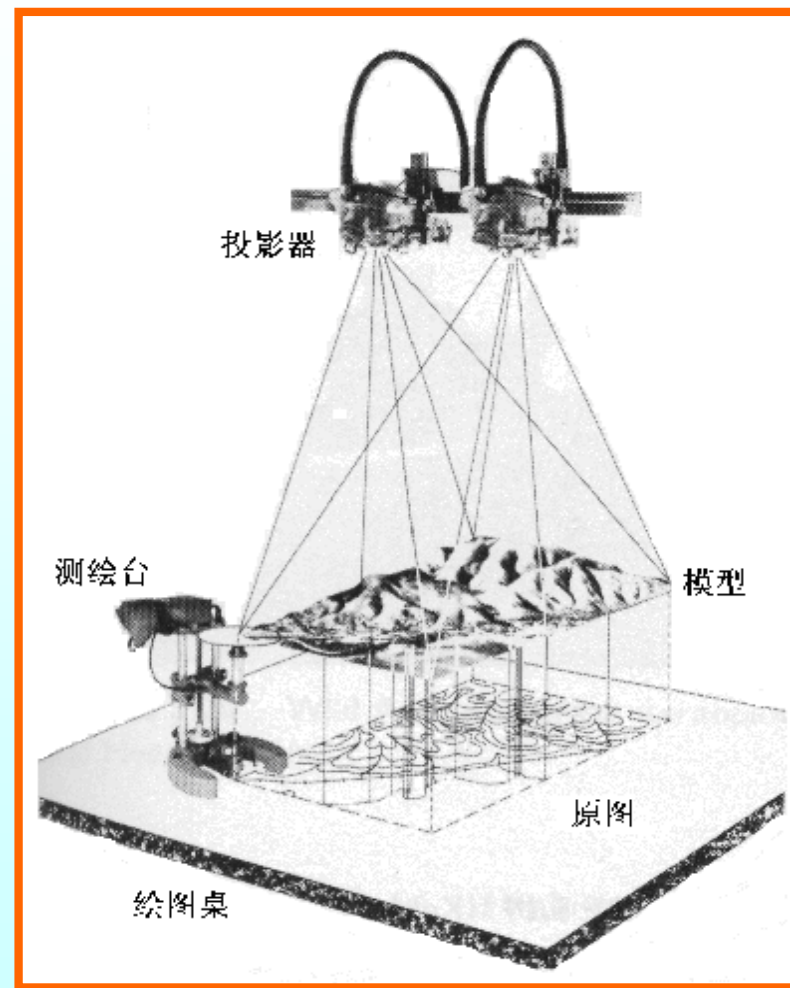
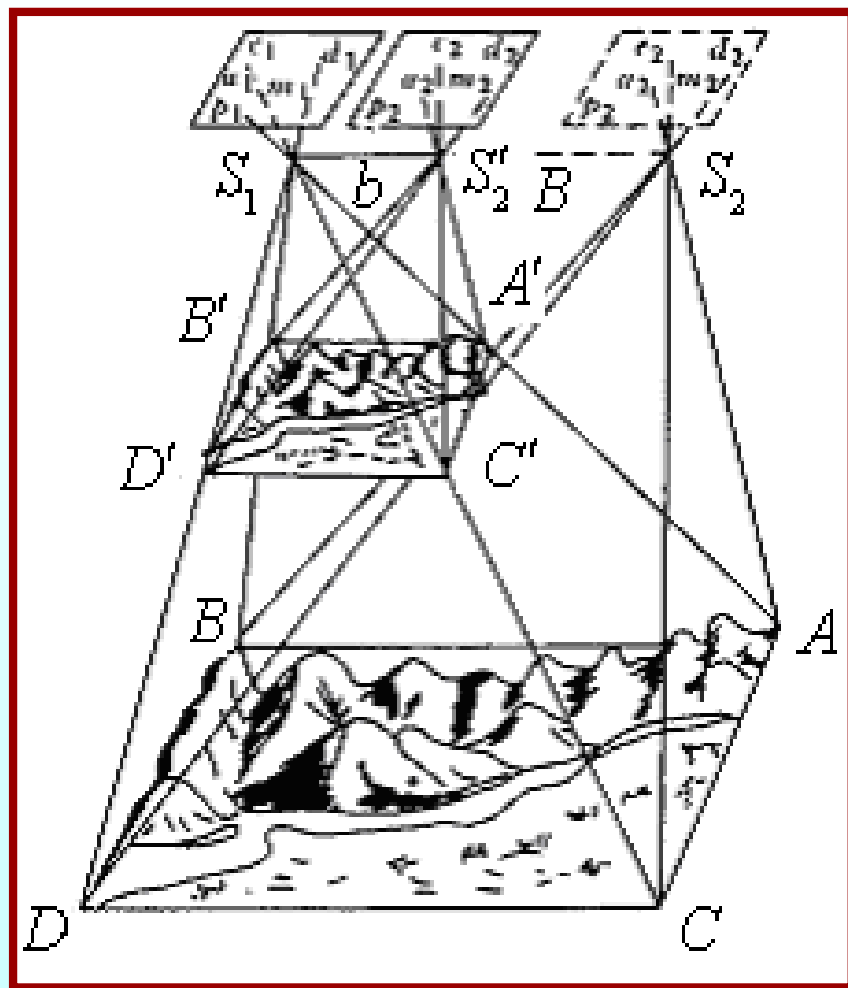


## 分屏法

# 像对的立体观察与量测



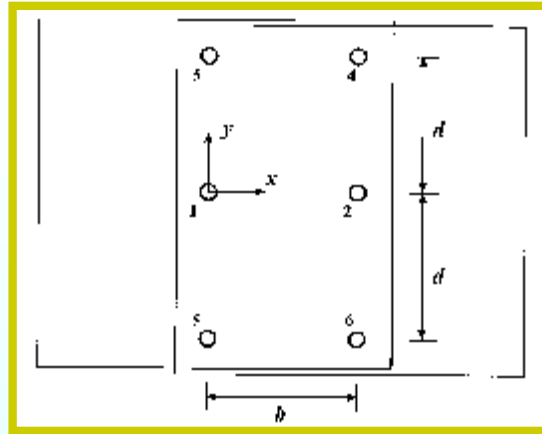
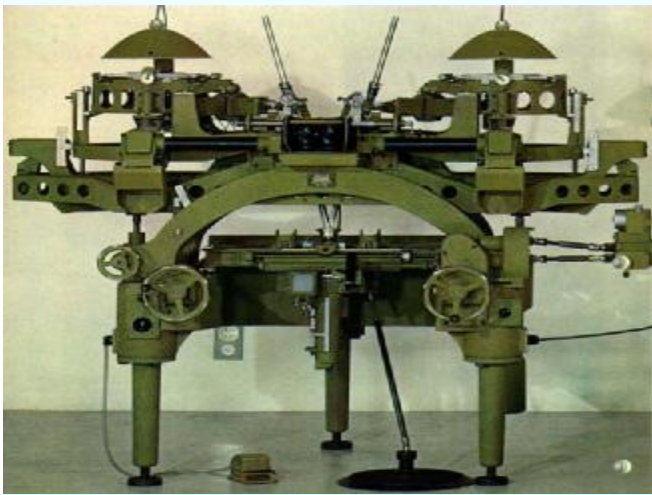
# 模拟测图的原理与方法



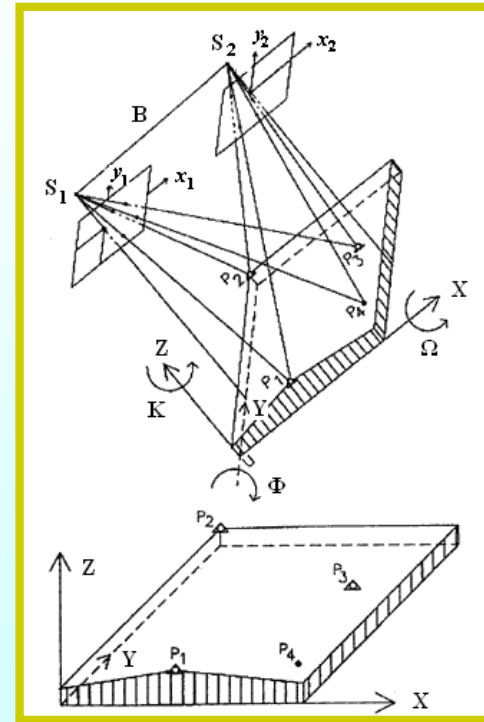
## 摄影过程的几何反转

# 模拟测图的原理与方法

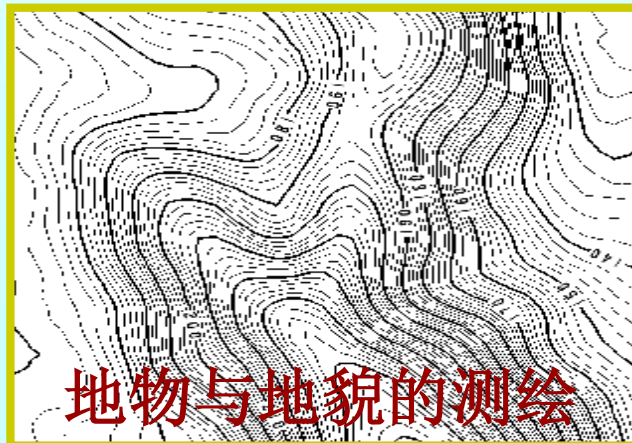
q 测图基本过程：



模拟法相对定向

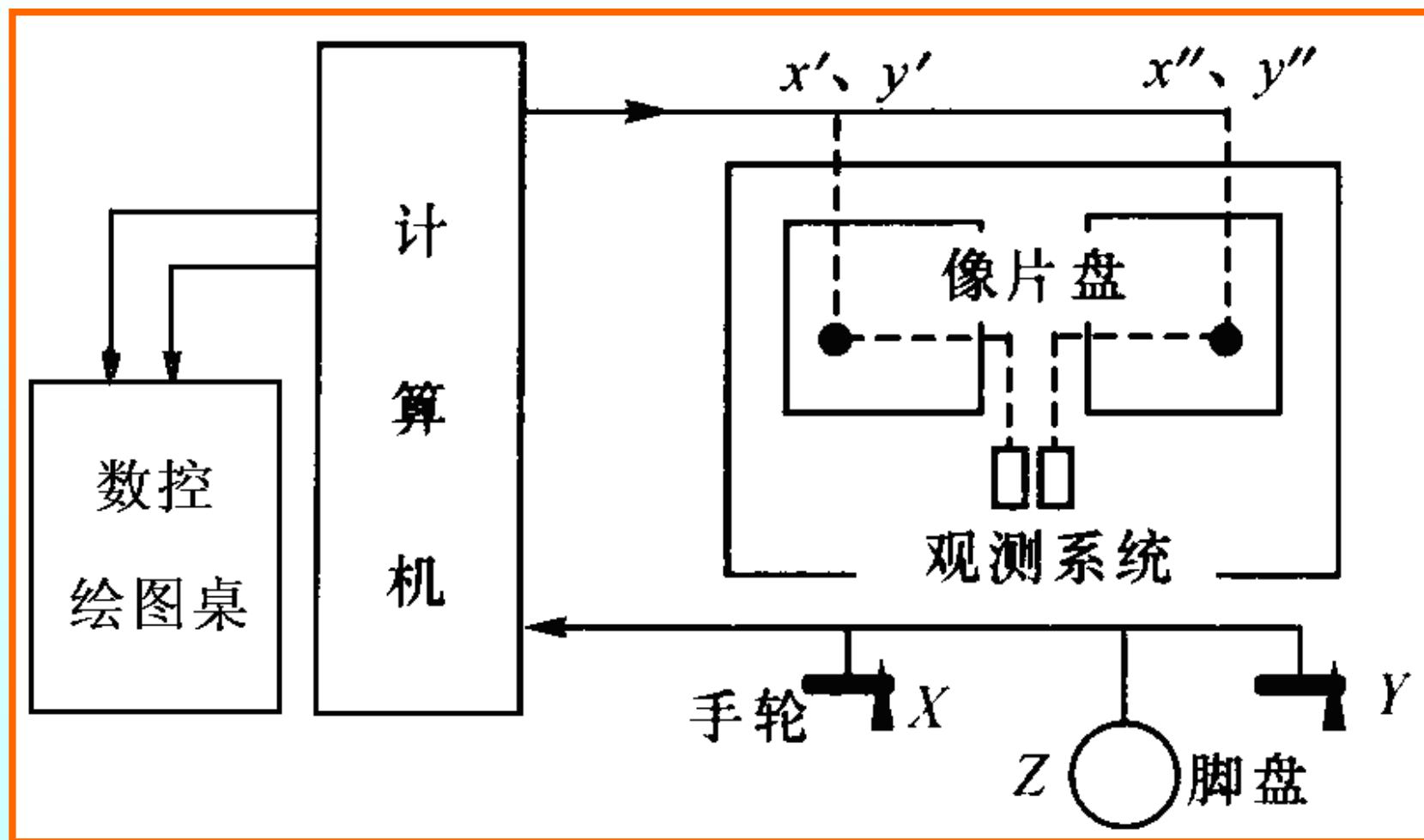


模拟法绝对定向



地物与地貌的测绘

## 解析法测图的原理与方法





# 数字摄影测量测图的原理与方法



# THE END



Question?

