

Stereo Vision Basics

Stereo Vision - Basics

Two cameras: Left and Right

Optical centres: O_L and O_R

Virtual image plane is projection of actual image plane through optical centre

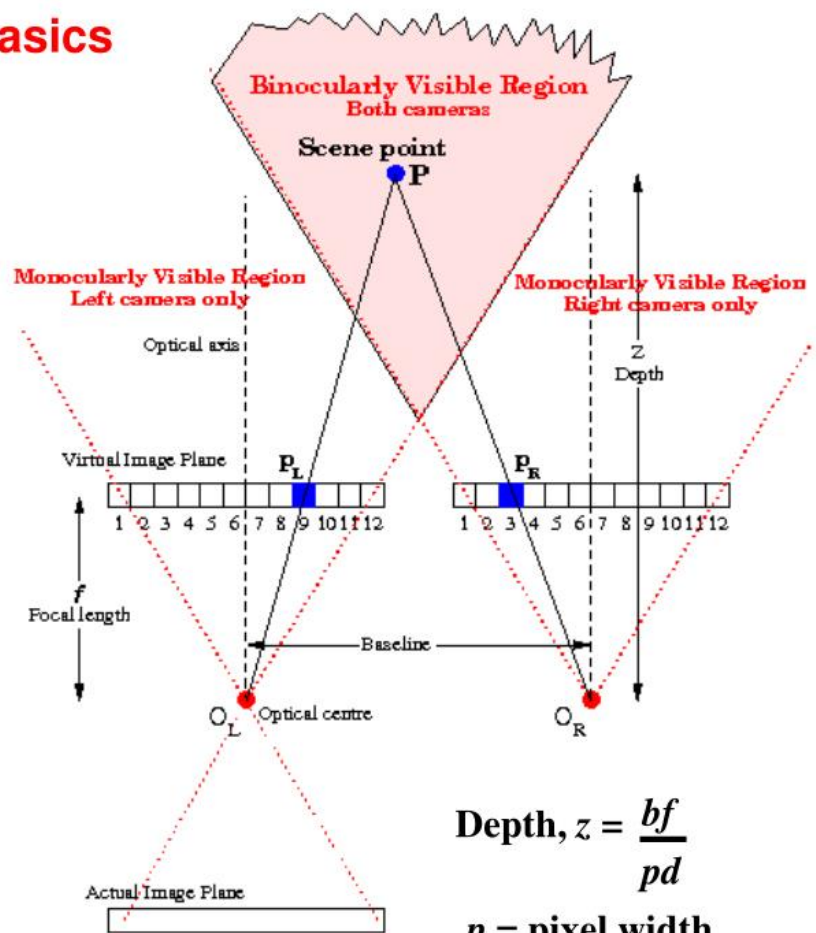
Baseline, b , is the separation between the optical centres
Scene Point, P , imaged at p_L and p_R

$$p_L = 9$$

$$p_R = 3$$

$$\text{Disparity, } d = p_R - p_L = 6$$

Disparity is the amount by which the two images of P are displaced relative to each other



$$\text{Depth, } z = \frac{bf}{pd}$$

$$p = \text{pixel width}$$