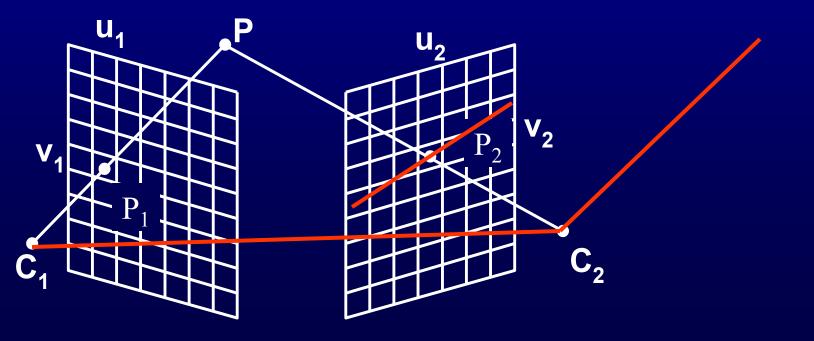
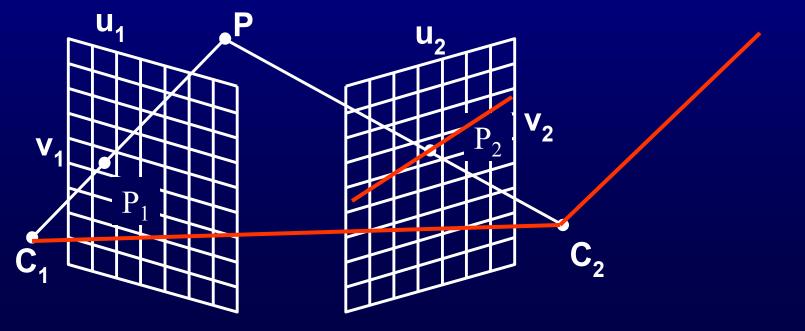
## Epipolar line

- C<sub>1</sub>, C<sub>2</sub>, P<sub>1</sub> define a plane
- P<sub>2</sub> will be on that plane
- P<sub>2</sub> is also on the image plane <sub>2</sub>
- So P<sub>2</sub> will be on the line defined by the two planes' intersection



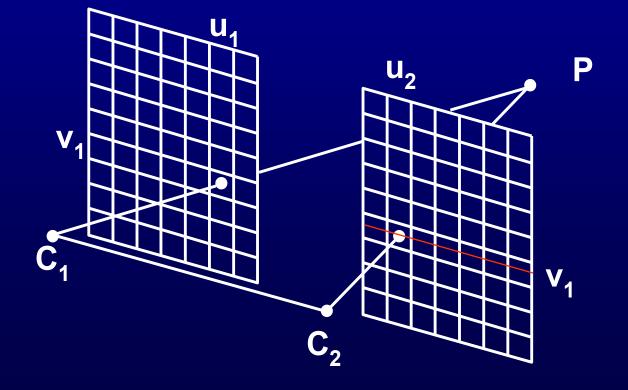
# Search for correspondences on epipolar line

- Reduces the dimensionality of the search space
- Walk on epipolar segment rather than search in entire image



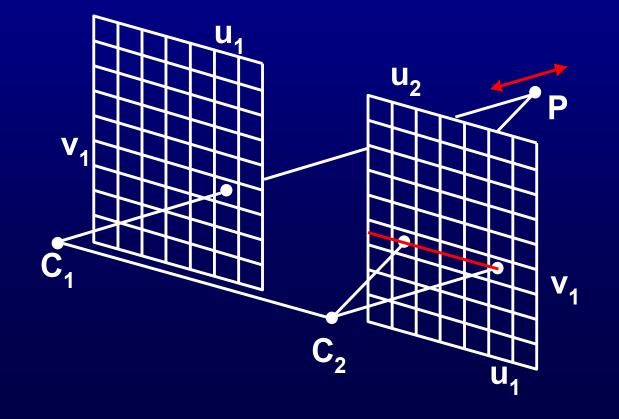
#### Parallel views

- Preferred stereo configuration
  - epipolar lines are horizontal, easy to search



#### Parallel views

- Limit search to epipolar segment
  - from  $u_2 = u_1$  (P is infinitely far away) to 0 (P is close)



### Depth precision analysis

- 1/z linear with disparity  $(u_1 u_2)$
- better depth resolution for nearby objects
- important to determine correspondences with subpixel accuracy

