$$F = g(x,y) - k_1 h(x',y') - k_2 = 0$$
$$\left. \begin{array}{l} x' = a_1 x + a_2 y + a_3 \\ y' = b_1 x + b_2 y + b_3 \end{array} \right\} \quad a_3, b_3 : \text{shifts}$$

unknowns: $k_1, k_2, a_1, a_2, a_3, b_1, b_2, b_3$

$$F = g(x,y) - k_1 h(a_1 x + a_2 y + a_3, b_1 x + b_2 y + b_3) - k_2 = 0$$

$$B = \left[\frac{\partial F}{\partial a} \right] \qquad g : \text{obs}, \quad h : \text{constant}$$

29-1

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Auto orientation algorithm

29-2

- find IP's on left + right images
- for each point find best match on right
  (left)
  via CC

- use RANSAC = random sample consensus
- ⟶ • take random sample of 8 points
  • compute R/O + count <u>inliers</u>
- select model w/ most <u>inliers</u>
- take that model + all inliers — solve R/O by coplanarity

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$\Rightarrow$ found the best model R/O   29-3
even though data was corrupted
by false matches.

<u>Robust Estimation</u>   IRLS, Data Snoop,
                        L1 norm,

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