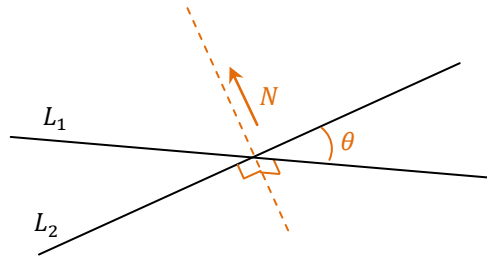


## Plücker Line – Angle Between Two Lines

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The angle ( $\theta$ ) between two Plücker lines ( $L_1$  and  $L_2$ ) is calculated relative to the plane they define.



Where the Plücker lines are each defined as a direction vector and a moment vector.

$$L_1 = \{D_1; M_1\} = \{D_{1x}, D_{1y}, D_{1z}; M_{1x}, M_{1y}, M_{1z}\}$$
$$L_2 = \{D_2; M_2\} = \{D_{2x}, D_{2y}, D_{2z}; M_{2x}, M_{2y}, M_{2z}\}$$

And the normal ( $N$ ) of their shared plane is then calculated as the cross product of the direction vectors:

$$N = D_1 \times D_2$$

The angle between the lines in the shared plane is calculated from the dot product of the direction vectors.

$$\theta = \arccos\left(\frac{D_1 \cdot D_2}{|D_1| \cdot |D_2|}\right)$$

This approach holds even if the lines are skew, because the two lines still represent a shared plane.

