Formulas and Derivations

Projection Equations

(1)

(2)

where X, Y, and Z are coordinates in the scene and x and y are image coordinates.

Differentiate to get optical flow:

(3)

(4)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

(14)

(15)

For y to end an the axis, rotate through the angle:

(16)

(16)

(16)

substitute:

(17)

(17)

(18)

(4)