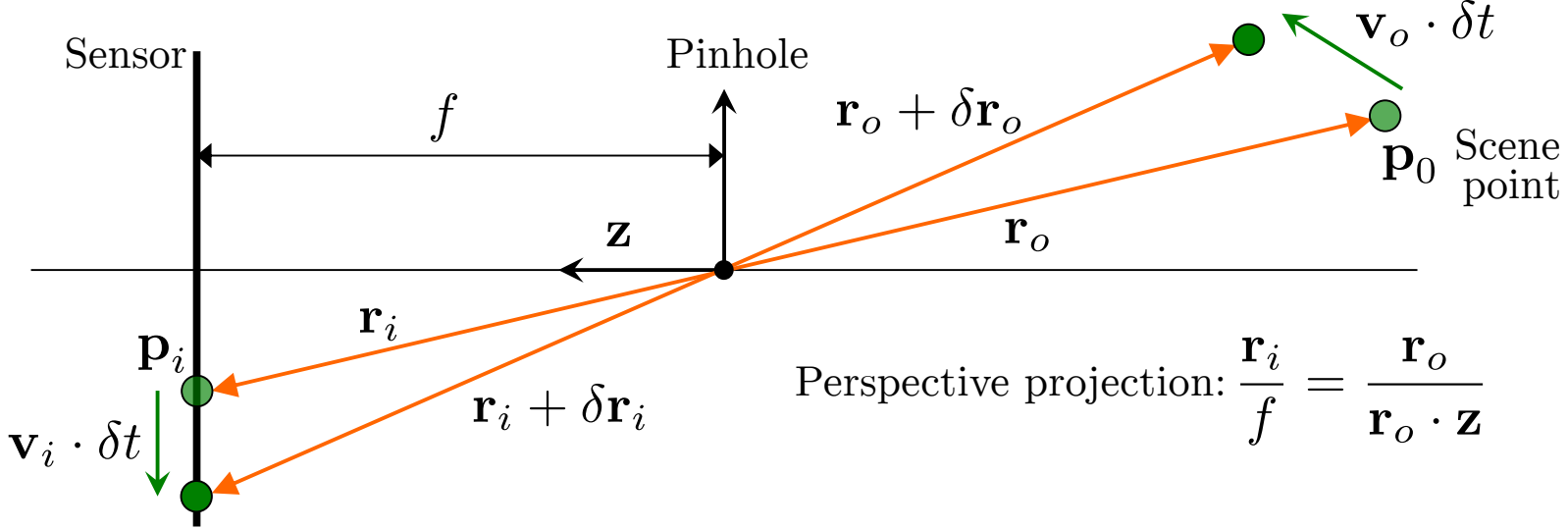

Perspective projection: $\dfrac{\mathbf{r}_i}{f} = \dfrac{\mathbf{r}_o}{\mathbf{r}_o \cdot \mathbf{z}}$

Image Point Velocity (Motion Field): $\mathbf{v}_i = \dfrac{d\mathbf{r}_i}{dt} = f\,\dfrac{(\mathbf{r}_o \cdot \mathbf{z})\mathbf{v}_o - (\mathbf{v}_o \cdot \mathbf{z})\mathbf{r}_o}{(\mathbf{r}_o \cdot \mathbf{z})^2}$

Scene Point Velocity: $\mathbf{v}_o = \dfrac{d\mathbf{r}_o}{dt}$

$$\mathbf{v}_i = f\,\frac{(\mathbf{r}_o \times \mathbf{v}_o) \times \mathbf{z}}{(\mathbf{r}_o \cdot \mathbf{z})^2}$$