$$
\begin{aligned}
\bar{r} &= \bar{v} \times \bar{o} \\
\bar{s} &= \bar{o} \times \bar{u} \\
\bar{n} &= \bar{u} \times \bar{v} \\
k_{\mathrm{r}} &= \bar{r} \cdot (C_a - \vec{V}) \\
k_s &= \bar{s} \cdot (C_a - \vec{V}) \\
k_n &= \bar{n} \cdot (C_a - \vec{V}) \\
x(\theta, v) &= \frac{\bar{r} \cdot D\_A(\theta, v) + k_{\mathrm{r}} \delta(\theta, v)}{\bar{n} \cdot D\_A(\theta, v) + k_n \delta(\theta, v)} \\
y(\theta, v) &= \frac{\bar{s} \cdot D\_A(\theta, v) + k_s \delta(\theta, v)}{\bar{n} \cdot D\_A(\theta, v) + k_n \delta(\theta, v)}
\end{aligned}
$$

where

$$
\begin{aligned}
\bar{v} &\in \mathbb{R}^3 \\
\bar{o} &\in \mathbb{R}^3 \\
\bar{u} &\in \mathbb{R}^3 \\
\vec{V} &\in \mathbb{R}^3 \\
C_a &\in \mathbb{R}^3 \\
\theta &\in \mathbb{R} \\
v &\in \mathbb{R} \\
D\_A &\in \mathbb{R}, \mathbb{R} \to \mathbb{R}^3 \\
\delta &\in \mathbb{R}, \mathbb{R} \to \mathbb{R}
\end{aligned}
$$