

$$\begin{aligned}
p_{x2} = &-\frac{\rho_0}{\rho_b}(\sin \psi_2 + \sin(\omega + \psi_1)) \\
&+ p_{z1} \sin \omega + p_{x1} \cos \omega - \frac{x_1}{\rho_b \sin \omega} \,, \\
p_{z2} = &\sqrt{p_{x1}^2 + p_{z1}^2 - p_{x2}^2} \,, \\
x_2 = &x_1 \cos \omega + \rho_b(p_{z2} - p_{z1} \cos \omega + p_{x1} \sin \omega) \\
&+ \rho_0(\cos(\omega + \psi_1) - \cos \psi_2) \,, \\
y_2 = &y_1 + s \frac{p_{y1}}{\sqrt{p_1^2 - p_{y1}^2}} \,, \\
z_2 = &z_1 - s \frac{p_1}{\sqrt{p_1^2 - p_{y1}^2}} + \frac{v_1}{v_0} L' \,, \\
\text{where } \rho_0 \equiv &\frac{L'}{\text{ANGLE}} \,, \\
\omega \equiv &\text{ANGLE} - \psi_1 - \psi_2 \,, \\
s \equiv &\text{ANGLE} \times \rho_b \\
&\times \left(\sin^{-1} \frac{p_{x1}}{\sqrt{p_1^2 - p_{y1}^2}} - \sin^{-1} \frac{p_{x2}}{\sqrt{p_2^2 - p_{y2}^2}} + \omega \right) \,.
\end{aligned}$$