$$b_r(y_{br}) := 2 \cdot \sqrt{R^2 - (|y_{br}| + y_G)^2}$$

$$\alpha(y_{br}) := \frac{180}{\pi} \operatorname{atan}\left(\frac{\frac{|y_{br}| + y_G}{b_r(y_{br})}}{2}\right)$$