

$$\text{atan2}(y,x)=\begin{cases} \text{atan}\left(\frac{y}{x}\right) & x>0 \\ \text{atan}\left(\frac{y}{x}\right)+\pi & y\geq 0, x<0 \\ \text{atan}\left(\frac{y}{x}\right)-\pi & y<0, x<0 \\ \frac{\pi}{2} & y>0, x=0 \\ -\frac{\pi}{2} & y<0, x=0 \\ 0 & y=0, x=0 \end{cases}$$