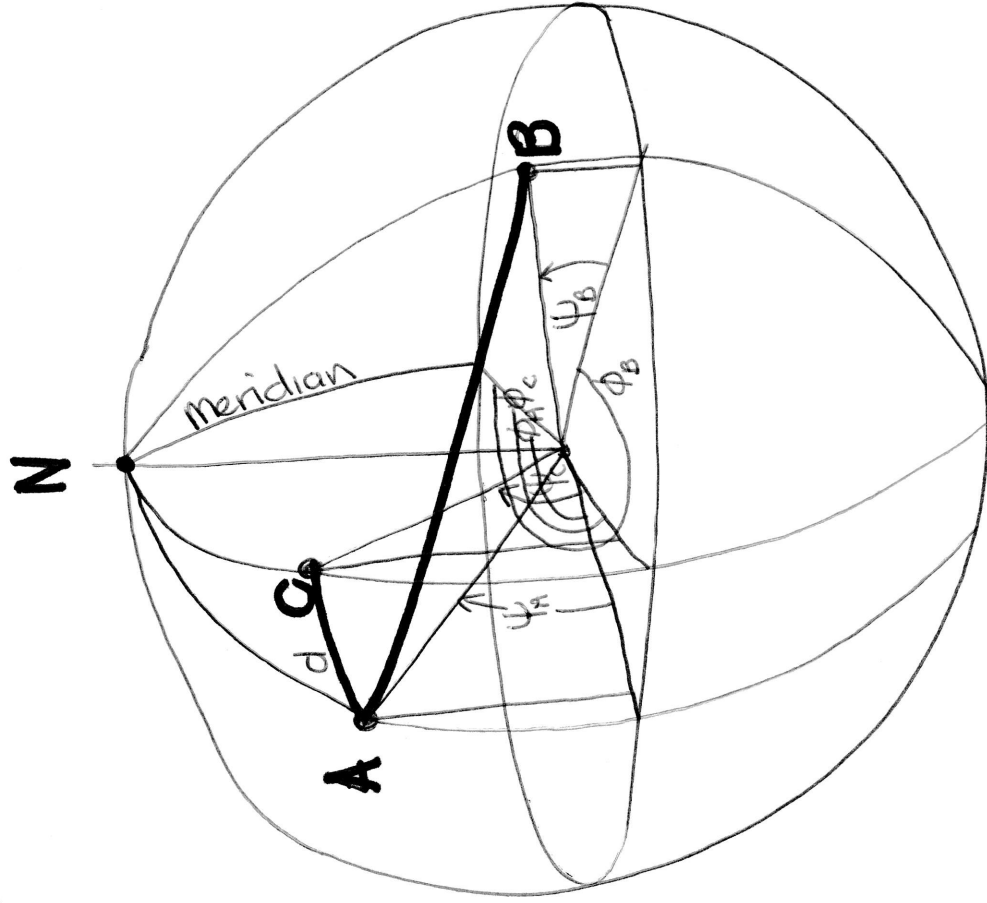


Cross Track

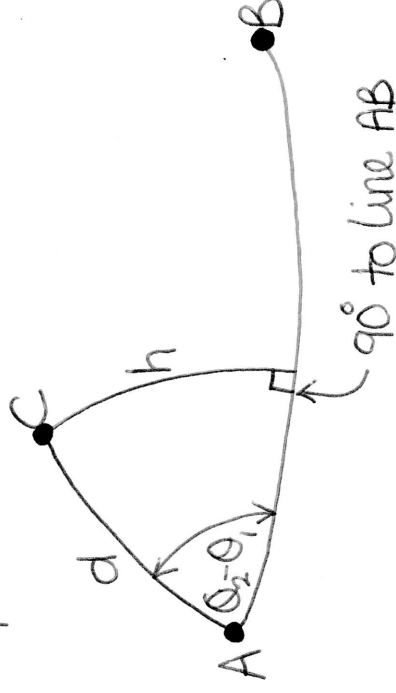


Given ψ_A, ϕ_A ψ_B, ϕ_B ψ_C, ϕ_C

1) Calc distance d. Formula distance between 2 points.

2) Calc. angle $\theta_1 = NAB$ { using previous derived formula
 $\theta_2 = NAC$ }

Spherical law of Sines



$$\frac{\sin(\theta_2 - \theta_1)}{\sin h} = \frac{1}{\sin(90^\circ)} \cdot \frac{1}{\sin(d)}$$

$$\sin(h) = \sin(\theta_2 - \theta_1) \sin(d)$$

cross track $h = \sin^{-1}(\sin(\theta_2 - \theta_1) \cdot \sin(d)) \times \text{radius of sphere}$