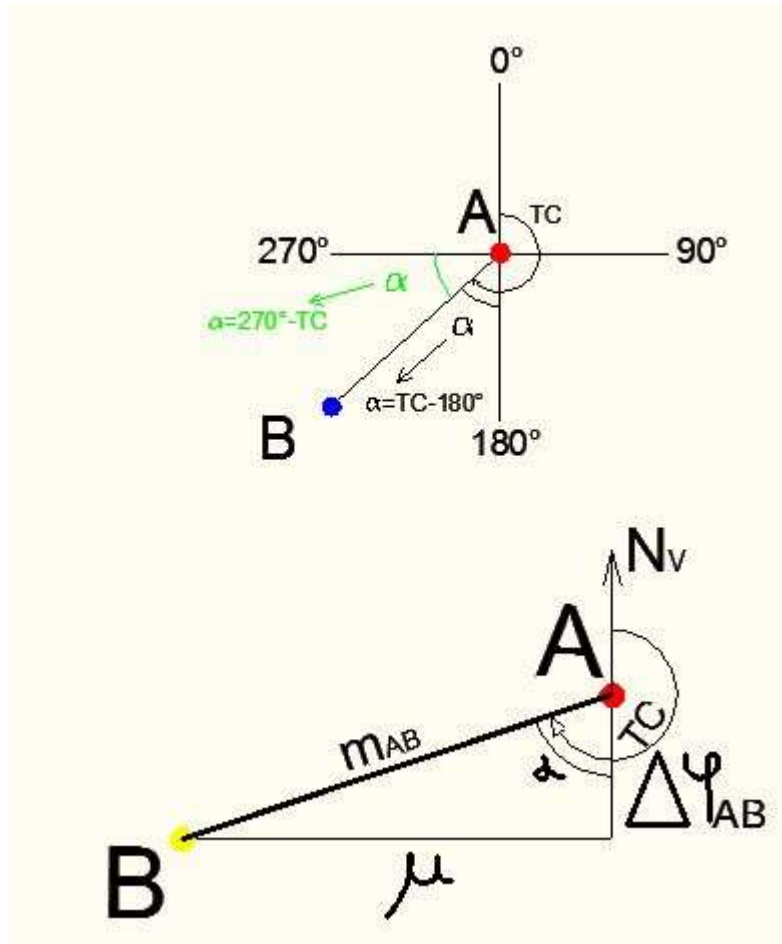


Problema 1: Calcolare la distanza lossodromica e la rotta da impostare per andare dall'aeroporto di **Brussel** (Codice ICAO: EBBR – Latitudine $\varphi_A = 50.9014$ N – Longitudine $\lambda_A = 4.4844$ E) all'aeroporto di **Lisbona** (Codice ICAO: LPPT – Latitudine $\varphi_B = 38.7813$ N – Longitudine $\lambda_B = 9.1359$ W).

[TC = 218°; $m_{AB} = 927,8$ NM]

Svolgimento



$$\Delta\varphi_{AB} = \varphi_B - \varphi_A = 38^\circ,7813 - 50^\circ,9014 = 12^\circ,1201S \equiv 727,2NM$$

$$\Delta\lambda_{AB} = \lambda_B - \lambda_A = -9^\circ,1359 - 4^\circ,4844 = 13^\circ,6203W \equiv 817,2NM$$

$$\varphi_{C_A} = 7915,7 \cdot \log \left[\operatorname{tg} \left(45^\circ + \frac{\varphi_A}{2} \right) \right] = 3559',41$$

$$\varphi_{C_B} = 7915,7 \cdot \log \left[\operatorname{tg} \left(45^\circ + \frac{\varphi_B}{2} \right) \right] = 2528',07$$

$$\Delta\varphi_{C_{AB}} = |\varphi_{C_A} - \varphi_{C_B}| = 1031',34$$

$$\operatorname{Tg}(\alpha) = \frac{\operatorname{sen}(\alpha)}{\cos(\alpha)} = \frac{\Delta\varphi_{C_{AB}}}{\Delta\lambda_{AB}} \rightarrow \alpha = \operatorname{arctg} \left(\frac{1031',34}{817',2} \right) = 51^\circ,61$$

$$TC = 270^\circ - \alpha = 270^\circ - 51^\circ,61 \cong 218^\circ$$

$$m_{AB} = \frac{\Delta\varphi_{AB}}{\operatorname{sen}(\alpha)} = \frac{727,2}{\operatorname{sen}(51^\circ,61)} = 927,8 \text{ NM}$$