

LOKSODROMSKA PLOVIDBA:

1. Loksodromski zadatak:

$$\operatorname{tg} K = \frac{\Delta\lambda}{\Delta\varphi_M}$$

$$D_L = \frac{\Delta\varphi}{\cos K}$$

$$\varphi_M = 7915.7048 \cdot \log [\operatorname{tg} (45^\circ + \varphi/2)]'$$

2. Loksodromski zadatak:

$$\Delta\varphi = D_L \cdot \cos K$$

$$\Delta\lambda = \Delta\varphi_M \cdot \operatorname{tg} K$$

Određivanje K_L :

$\Delta\varphi$	$\Delta\lambda$	K_L
N	E	K
S	E	$180^\circ - K$
S	W	$180^\circ + K$
N	W	$360^\circ - K$

$$\Delta\varphi_M = \varphi_{M2} - \varphi_{M1} \quad (\text{N/S})$$

$$\Delta\varphi = \varphi_2 - \varphi_1 \quad (\text{N/S})$$

$$\Delta\lambda = \lambda_2 - \lambda_1 \quad (\text{E/W})$$

Posebni slučajevi plovidbe:

1. Plovidba po ekvatoru:

$$\Delta\varphi = 0^\circ; D_L = \Delta\lambda'; K = 090^\circ \text{ ili } 270^\circ$$

2. Plovidba po paraleli:

$$\Delta\varphi = 0^\circ; D_L = \Delta\lambda \cdot \cos\varphi'; K = 090^\circ \text{ ili } 270^\circ$$

3. Plovidba po meridijanu:

$$\Delta\lambda = 0^\circ; D_L = \Delta\varphi'; K = 0^\circ \text{ ili } 180^\circ$$

ORTODROMSKA PLOVIDBA:

Ortodromska udaljenost:

$$\cos D_o = \sin \varphi_1 \cdot \sin \varphi_2 + \cos \varphi_1 \cdot \cos \varphi_2 \cdot \cos \Delta\lambda$$

Početni ortodromski kurs:

Završni ortodromski kurs:

$$\cos\alpha = \frac{\sin\varphi_2 - \sin\varphi_1 \cdot \cos D_o}{\cos\varphi_1 \cdot \sin D_o}$$

$$\cos\beta = \frac{\sin\varphi_1 - \sin\varphi_2 \cdot \cos D_o}{\cos\varphi_2 \cdot \sin D_o}$$

$$K_{OP} = \alpha$$

$$K_{OP} = 360^\circ - \alpha$$

Plovidba na istok

Plovidba na zapad

$$K_{OZ} = 180^\circ - \beta$$

$$K_{OZ} = 180^\circ + \beta$$

Vrh ortodrome:

$$\cos\varphi_V = \cos\varphi_1 \cdot \sin\alpha$$

$$\cos\beta = \frac{\operatorname{tg}\varphi_1}{\operatorname{tg}\varphi_V}$$

$$\lambda_V = (\pm\lambda_1) + (\pm\Delta\lambda_V)$$

Međutočke ortodrome:

$$\operatorname{tg}\varphi_m = \cos\Delta\lambda_m \cdot \operatorname{tg}\varphi_V$$

$$\lambda_m = (\pm\lambda_V) + (\pm\Delta\lambda_m)$$

$$\Delta\lambda_m = (\pm 10^\circ, \pm 20^\circ, \pm 30^\circ \text{ ili sl.})$$

KOMBINIRANA PLOVIDBA

Granične točke:

$$A \left\{ \begin{array}{l} \varphi_{GR} \\ \lambda_A = (\pm\lambda_1) + (\pm\Delta\lambda_A) \end{array} \right.$$

$$B \left\{ \begin{array}{l} \varphi_{GR} \\ \lambda_B = (\pm\lambda_2) + (\pm\Delta\lambda_B) \end{array} \right.$$

$$\cos\Delta\lambda_A = \frac{\operatorname{tg} \varphi_1}{\operatorname{tg} \varphi_{GR}}$$

$$\cos\Delta\lambda_B = \frac{\operatorname{tg} \varphi_2}{\operatorname{tg} \varphi_{GR}}$$

Međutočke kombinirane plovidbe:

$$\operatorname{tg}\varphi_m = \cos\Delta\lambda_m \cdot \operatorname{tg}\varphi_{GR}$$

$$\lambda_m = (\pm\lambda_{A,B}) + (\pm\Delta\lambda_m)$$

$$\Delta\lambda_m = (\pm 10^\circ, \pm 20^\circ, \pm 30^\circ \text{ ili sl.})$$

Ukupna udaljenost:

$$D_U = D_{O1} + D_L + D_{O2}$$

$$\cos D_{O1} = \frac{\sin \varphi_1}{\sin \varphi_{GR}}$$

$$D_L = \Delta\lambda_L \cdot \cos\varphi_{GR}$$

$$\cos D_{O2} = \frac{\sin \varphi_2}{\sin \varphi_{GR}}$$

$$\Delta\lambda_L = (\pm\lambda_B) - (\pm\lambda_A)$$