LOKSODROMSKA PLOVIDBA:

1. Loksodromski zadatak:

$$\text{tg } K = \frac{\Delta\lambda}{\Delta\varphi_M} \qquad D_L = \frac{\Delta\varphi}{\cos K}$$

$$\varphi_M = 7915.7048 \cdot \log [\text{tg } (45° + \varphi/2)]\,'$$

2. Loksodromski zadatak: $\Delta\varphi = D_L \cdot \cos K$ $\quad \Delta\lambda = \Delta\varphi_M \cdot \text{tg } K$

Određivanje K_L:

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

$\Delta\varphi_M = \varphi_{M_2} - \varphi_{M_1}$ (N/S)

$\Delta\varphi = \varphi_2 - \varphi_1$ (N/S)

$\Delta\lambda = \lambda_2 - \lambda_1$ (E/W)

Posebni slučajevi plovidbe:

1. Plovidba po ekvatoru: $\Delta\varphi = 0°$; $D_L = \Delta\lambda'$; $K = 090°$ ili $270°$
2. Plovidba po paraleli: $\Delta\varphi = 0°$; $D_L = \Delta\lambda \cdot \cos\varphi'$; $K = 090°$ ili $270°$
3. Plovidba po meridijanu: $\Delta\lambda = 0°$; $D_L = \Delta\varphi'$; $K = 0°$ ili $180°$

ORTODROMSKA PLOVIDBA:

Ortodromska udaljenost: $\cos Do = \sin \varphi_1 \cdot \sin \varphi_2 + \cos \varphi_1 \cdot \cos \varphi_2 \cdot \cos \Delta\lambda$

Početni ortodromski kurs:

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

Završni ortodromski kurs:

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

$K_{OP} = \alpha$ Plovidba na istok $K_{OZ} = 180° - \beta$

$K_{OP} = 360° - \alpha$ Plovidba na zapad $K_{OZ} = 180° + \beta$

Vrh ortodrome:

$$\cos\varphi_V = \cos\varphi_1 \cdot \sin\alpha \qquad \cos\Delta\lambda_V = \frac{\text{tg}\varphi_1}{\text{tg}\varphi_V} \qquad \lambda_V = (\pm\lambda_1) + (\pm\Delta\lambda_V)$$

Međutočke ortodrome:

$$\text{tg}\varphi_m = \cos\Delta\lambda_m \cdot \text{tg}\varphi_V \qquad \lambda_m = (\pm\lambda_V) + (\pm\Delta\lambda_m) \qquad \Delta\lambda_m = (\pm 10°, \pm 20°, \pm 30° \text{ ili sl.})$$

KOMBINIRANA PLOVIDBA

Granične točke:

$$A \begin{cases} \varphi_{GR} \\ \lambda_A = (\pm\lambda_1) + (\pm\Delta\lambda_A) \end{cases} \qquad B \begin{cases} \varphi_{GR} \\ \lambda_B = (\pm\lambda_2) - (\pm\Delta\lambda_B) \end{cases}$$

$$\cos\Delta\lambda_A = \frac{\text{tg } \varphi_1}{\text{tg } \varphi_{GR}} \qquad \cos\Delta\lambda_B = \frac{\text{tg } \varphi_2}{\text{tg } \varphi_{GR}}$$

Međutočke kombinirane plovidbe:

$$\text{tg}\varphi_m = \cos\Delta\lambda_m \cdot \text{tg}\varphi_{GR} \qquad \lambda_m = (\pm\lambda_{A,B}) + (\pm\Delta\lambda_m) \qquad \Delta\lambda_m = (\pm 10°, \pm 20°, \pm 30° \text{ ili sl.})$$

Ukupna udaljenost: $D_U = D_{O1} + D_{LGR} + D_{O2}$

$$\cos D_{O1} = \frac{\sin \varphi_1}{\sin \varphi_{GR}} \qquad D_{LGR} = \Delta\lambda_{GR} \cdot \cos\varphi_{GR} \qquad \cos D_{O2} = \frac{\sin \varphi_2}{\sin \varphi_{GR}} \qquad \Delta\lambda_{GR} = (\pm\lambda_B) - (\pm\lambda_A)$$