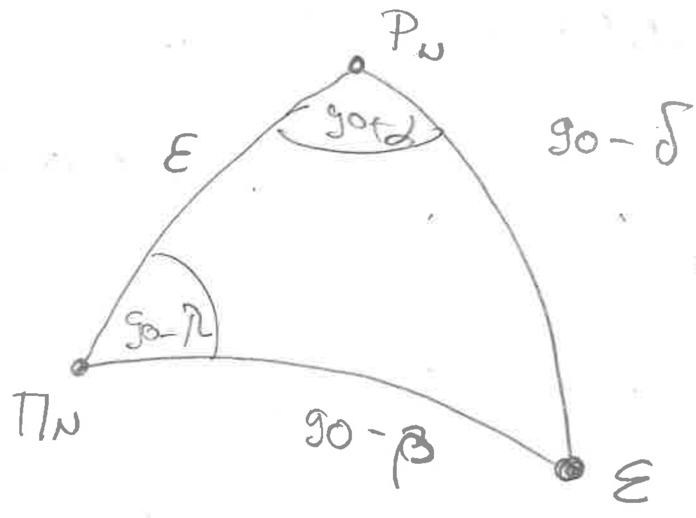
UTICAJ LUNI-SOLARNE PRECESIJE NA EKVATORSKE KOORDINATE

$\triangle\, \Pi_N P_N \Sigma$



KOSINUSNI OBRAZAC

$$\cos(90-\delta) = \cos\varepsilon \cos(90-\beta) + \sin\varepsilon \sin(90-\beta)\cos(90-\lambda)$$

$$\sin\delta = \cos\varepsilon \sin\beta + \sin\varepsilon \cos\beta \sin\lambda \quad (1)$$

SINUSNI OBRAZAC

$$\sin(90-\beta)\sin(90-\lambda) = \sin(90-\delta)\sin(90+\alpha)$$

$$\cos\beta\cos\lambda = \cos\delta\cos\alpha \quad (2)$$

DIFERENCIRAMO (1) UZIMAJUĆI U OBZIR DA JE $\beta = const$, $\lambda \neq const$

$$\cos\delta\, d\delta = \sin\varepsilon \cos\beta \cos\lambda\, d\lambda \quad (3)$$

(2) $\longrightarrow$ (3) $\Rightarrow$

$$\cancel{\cos\delta}\, d\delta = \sin\varepsilon \cancel{\cos\delta} \cos\alpha \, d\lambda$$

$$d\delta = \sin\varepsilon\cos\alpha \, d\lambda$$

$\Delta\psi$

$$\boxed{d\delta = \Delta\psi \sin\varepsilon \cos\alpha}$$

DIFERENCIRAMO (2) $(\beta = \text{const})$

$$\sin\delta\cos\alpha\, d\delta + \cos\delta \sin\alpha\, d\alpha = \underline{\cos\beta\sin\lambda}\, d\lambda \quad (4)$$

$\triangle\, \Pi_N P_N E$

SINUSNO - KOSINUSNI OBRAZAC

$$\sin(90-\beta)\cos(90-\lambda) = \cos(90-\delta)\sin\varepsilon - \sin(90-\delta)\cos\varepsilon \underbrace{\cos(90+\alpha)}_{-\sin\alpha}$$

$$\underline{\cos\beta\sin\lambda} = \sin\delta\sin\varepsilon + \cos\delta\cos\varepsilon\sin\alpha \quad (5)$$

(5) $\longrightarrow$ (4) $\Rightarrow$

$$\cos\delta \sin\alpha \, d\alpha = \underline{\cos\beta \sin}\lambda \, d\lambda - \sin\delta \cos\alpha \, d\delta \qquad (4)$$

$$\cos\delta \sin\alpha \, d\alpha = (\sin\delta \sin\varepsilon + \cos\delta \cos\varepsilon \sin\alpha) \, d\lambda$$
$$- \sin\delta \cos\alpha \, d\delta$$

$$\boxed{d\delta = \psi\tilde{\sigma} \sin\varepsilon \cos\alpha \qquad d\lambda = \psi\tilde{\sigma}}$$

$\Rightarrow$

$$\cos\delta \sin\alpha \, d\alpha = (\sin\delta \sin\varepsilon + \cos\delta \cos\varepsilon \sin\alpha) \psi\tilde{\sigma} -$$
$$- \sin\delta \cos^2\alpha \sin\varepsilon \, \psi\tilde{\sigma}$$

$$\cos\delta \sin\alpha \, d\alpha = \psi\tilde{\sigma} \left(\sin\delta \sin\varepsilon + \cos\delta \cos\varepsilon \sin\alpha - \sin\delta \sin\varepsilon \underbrace{\cos^2\alpha}_{1 - \sin^2\alpha} \right)$$

$$\cos\delta \cancel{\sin\alpha} \, d\alpha = \psi\tilde{\sigma} \left(\cancel{\sin\delta \sin\varepsilon} + \cos\delta \cos\varepsilon \cancel{\sin\alpha} - \cancel{\sin\delta \sin\varepsilon} + \sin\delta \sin\varepsilon \sin^2\alpha \right)$$

$$\Rightarrow \boxed{d\alpha = \psi\tilde{\sigma} \left(\cos\varepsilon + \operatorname{tg}\delta \sin\varepsilon \sin\alpha \right)}$$