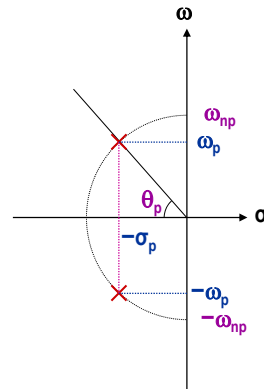




TRANSFERFUNCTIE - complex toegevoegde polen (2^e orde)

$$H_p = \frac{K}{(s/\omega_{np})^2 + (1/Q_p)(s/\omega_{np}) + 1}$$



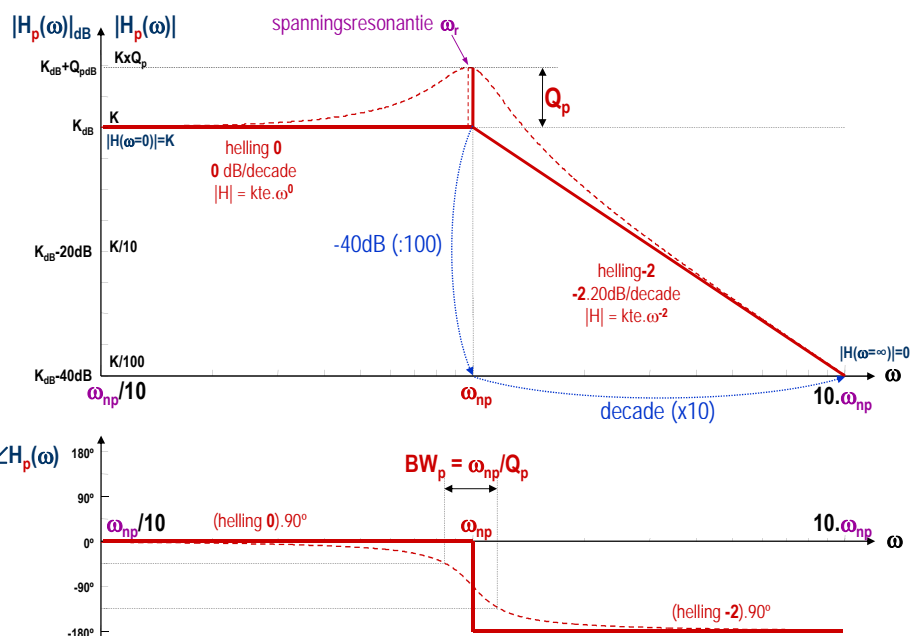
ω_{np} , Q_p : frequentie weergave

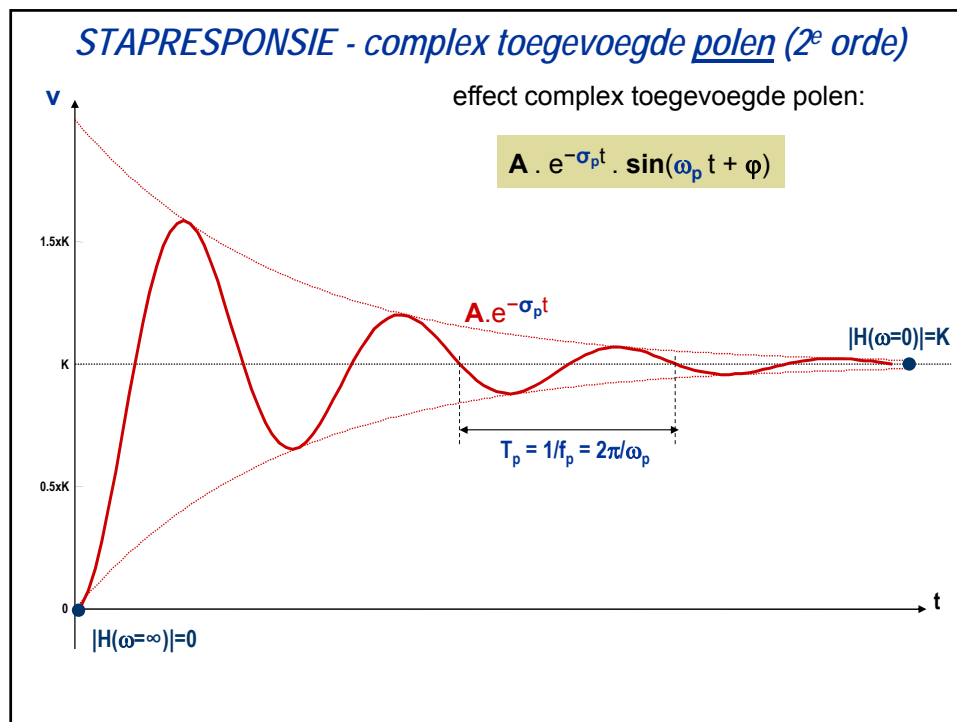
$$\zeta_p = 1/(2Q_p) = \cos \theta_p < 1$$

σ_p , ω_p : stapresponsie

$$\sigma_p = \zeta_p \cdot \omega_{np}$$

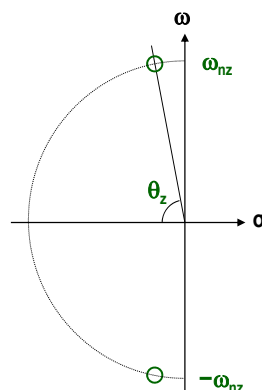
$$\omega_p = \omega_{np} \sqrt{1 - \zeta_p^2}$$

BODEDIAGRAM - complex toegevoegde polen (2^e orde)



TRANSFERTFUNCTIE - complex toegevoegde nulpunten (2^e orde)

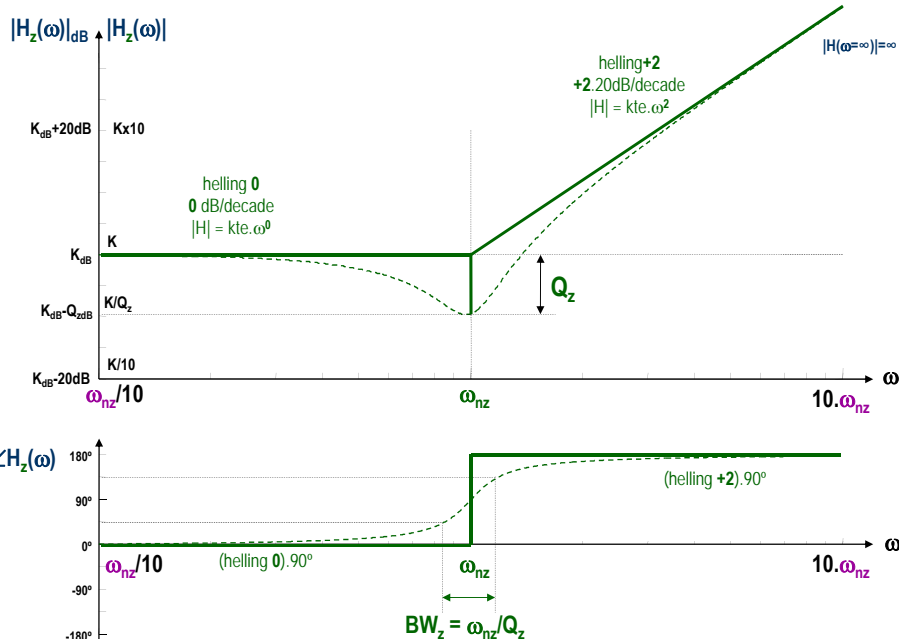
$$H_z = K \left[\left(\frac{s}{\omega_{nz}} \right)^2 + \left(\frac{1}{Q_z} \right) \left(\frac{s}{\omega_{nz}} \right) + 1 \right]$$



ω_{nz} , Q_z : frequentieergave

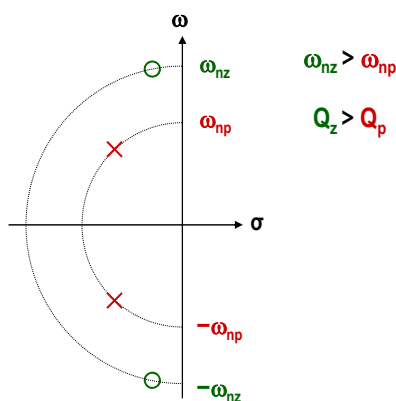
$$\zeta_z = 1/(2Q_z) = \cos \theta_z < 1$$

BODEDIAGRAM - complex toegevoegde nulpunten (2^e orde)



TRANSFERFUNCTIE - veralgemeend (2^e orde)

$$H = K \frac{(s/\omega_{nz})^2 + (1/Q_z)(s/\omega_{nz}) + 1}{(s/\omega_{np})^2 + (1/Q_p)(s/\omega_{np}) + 1}$$



BODEDIAGRAM - veralgemeend (2^e orde)

