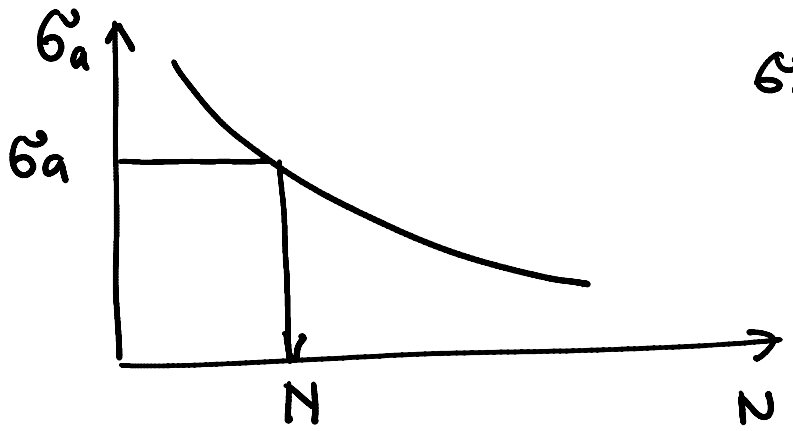
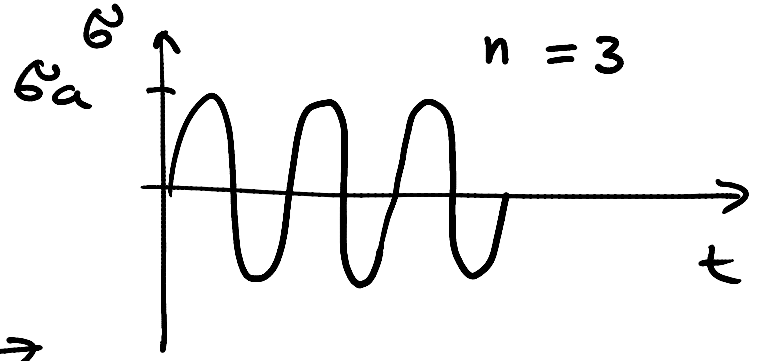
HAIBACHOVO PRAVILO O LINEARNI AKUMULACIJI POŠKODB

D - VELIKOST UTRUJENOSTNE POŠKODBE

D = 0 - NOV IZDELEK

D = 1 - V IZDELKU SE POJAVI KRITIČNA POŠKODBA

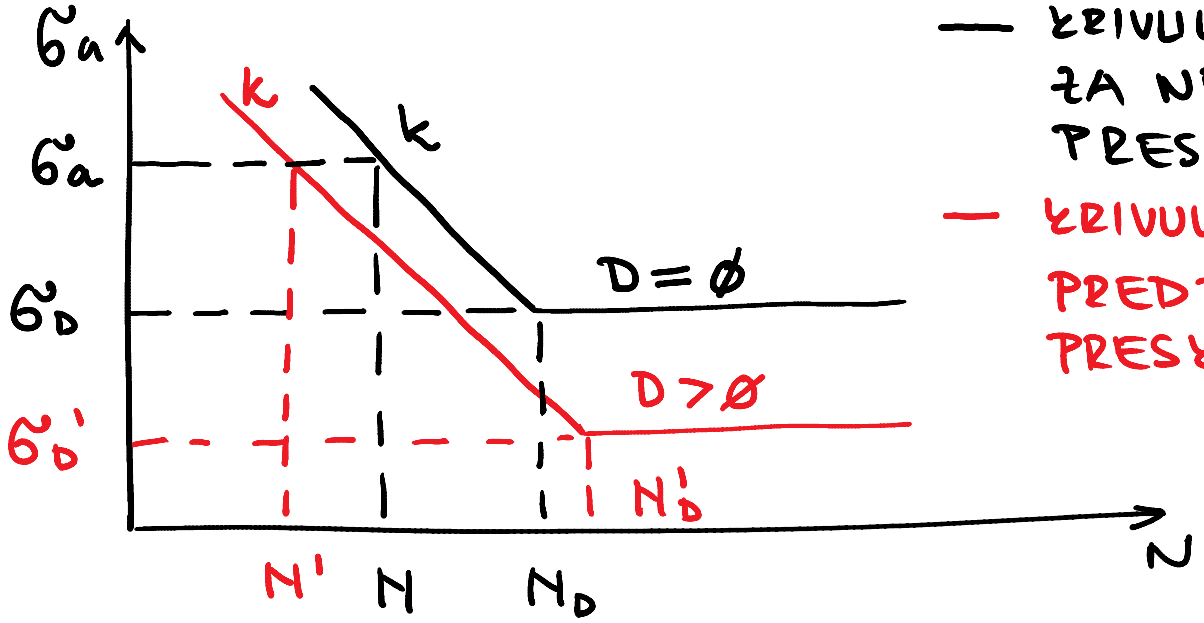




$$D = \frac{n}{N}$$

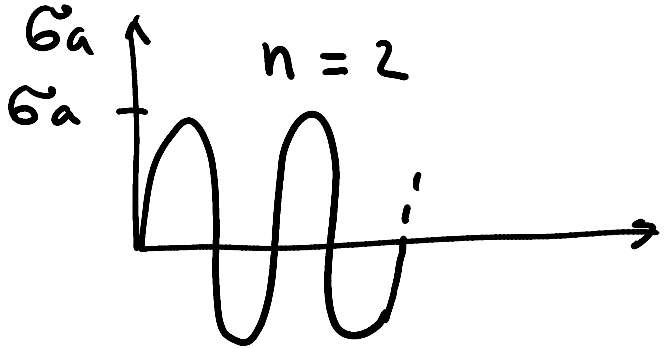
n - DEJANSKO ŠTEVILO OBR. CIKLOV

N - ŠTEVILO OBREMENITVENIH CIKLOV DO KRITIČNE POŠKO.



— KRIVULJA TRDNOSTI ZA NEPOŠKODOVANE PRESKUŠANCE

— KRIVULJA TRDNOSTI ZA PREDPOŠKODOVANE PRESKUŠANCE



$$D = \frac{n}{N}$$

V DRUGO SKUPINO PRESKUŠANCEV JE VNESEL POŠKODBO DOLOČENE VELIKOSTI D.

$$\log N = a - k \log \sigma_a$$

$$\log N_D = a - k \log \sigma_D$$

$$\log \frac{N}{N_D} = -k \log \frac{\sigma_a}{\sigma_D} = \log \left(\frac{\sigma_a}{\sigma_D} \right)^{-k}$$

$$N = N_D \left(\frac{\sigma_a}{\sigma_D} \right)^{-k} \quad (1)$$

$$N' = N'_D \left(\frac{\sigma_a}{\sigma'_D} \right)^{-k} \quad (2)$$

$$D = \frac{N - N'}{N} = \frac{n}{N} = 1 - \frac{N'}{N}$$

$$N' = N (1 - D) \quad (3)$$

$$\frac{\sigma_D'}{\sigma_D} = (1-D)^{\frac{1}{2}}$$ ④ HAIBACHOUO PRAVILO

2 - MATERIALNA KONSTANTA

$$\sigma_D' = \sigma_D (1-D)^{\frac{1}{2}}$$

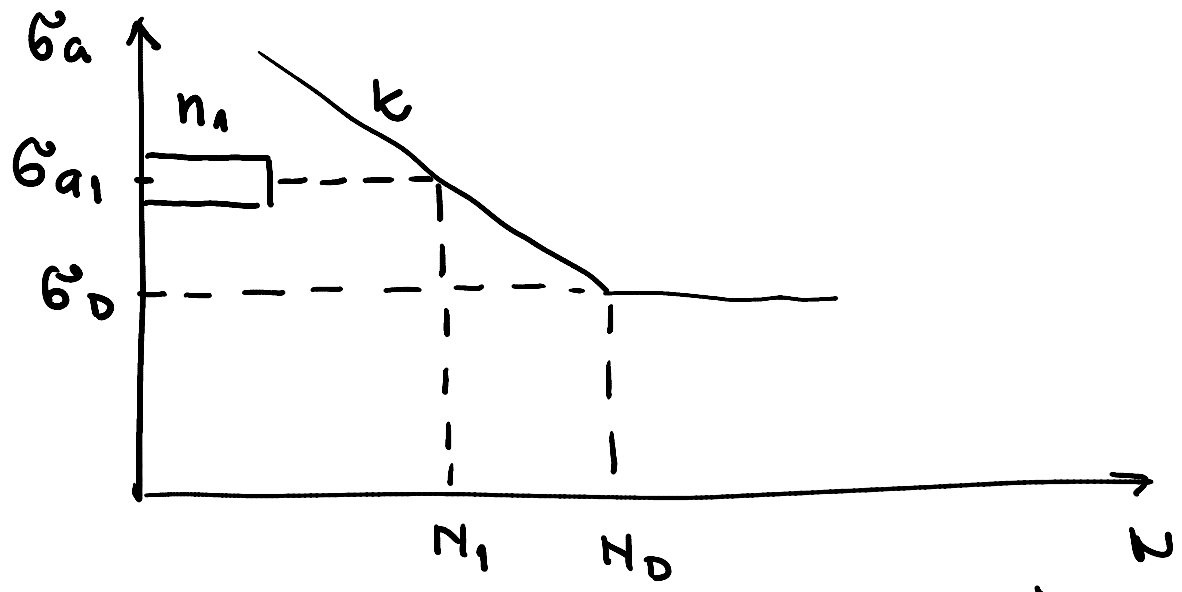
DELIMO ① i ②

$$\frac{N}{N'} = \frac{N_D}{N_D'} \frac{\cancel{\sigma_a^{-k}}\ \sigma_D'^{1-k}}{\sigma_D^{-k}\ \cancel{\sigma_a^{-k}}} = \frac{N_D}{N_D'} \left(\frac{\sigma_D'}{\sigma_D}\right)^{-k}$$

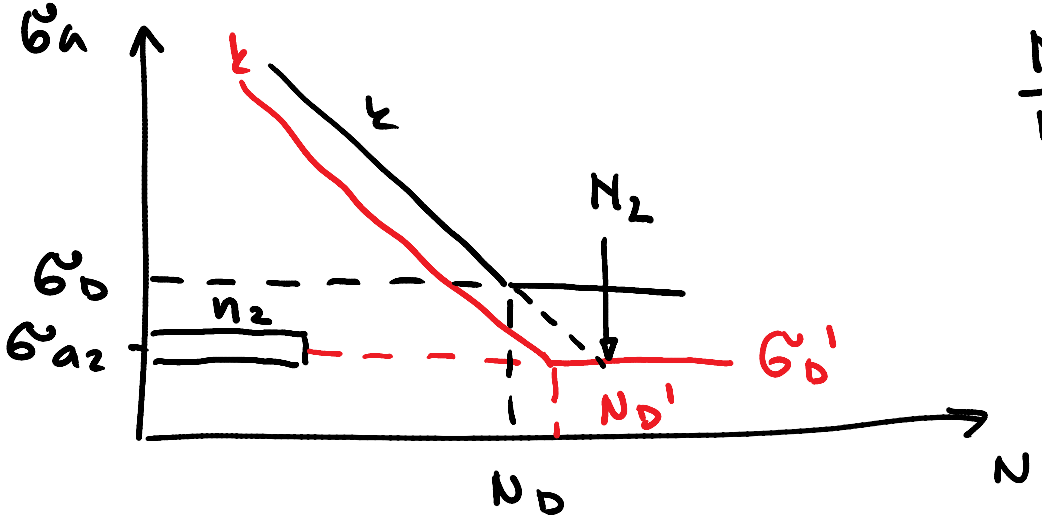
↑ ③ ↑ ④

$$\frac{1}{1-D} = \frac{N_D}{N_D'} (1-D)^{-\frac{k}{2}}$$

$$N_D' = N_D (1-D)^{1-\frac{k}{2}}$$ ⑤



$D_1 = \frac{n_1}{N_1}$; $N_1 = N_D \left(\frac{\sigma_{a1}}{\sigma_D} \right)^{-k}$ VELJA, ČE JE $\sigma_{a1} \geq \sigma_D$



$$\frac{N_2'}{N_2} = (1-D) = \frac{n_2'}{n_2}$$

③ ↑

HAIBACHOUA PREDPOSTAVKA

n_2 ŠTEVILO OBREMENITVENIH CIKLOV PRI σ_{a2}

n_2' ŠTEVILO OBREMENITVENIH CIKLOV, KI PRI σ_{a2} DOPRINESEJO K POŠKODBI

$$n_2' = n_2(1-D)$$

① ↓

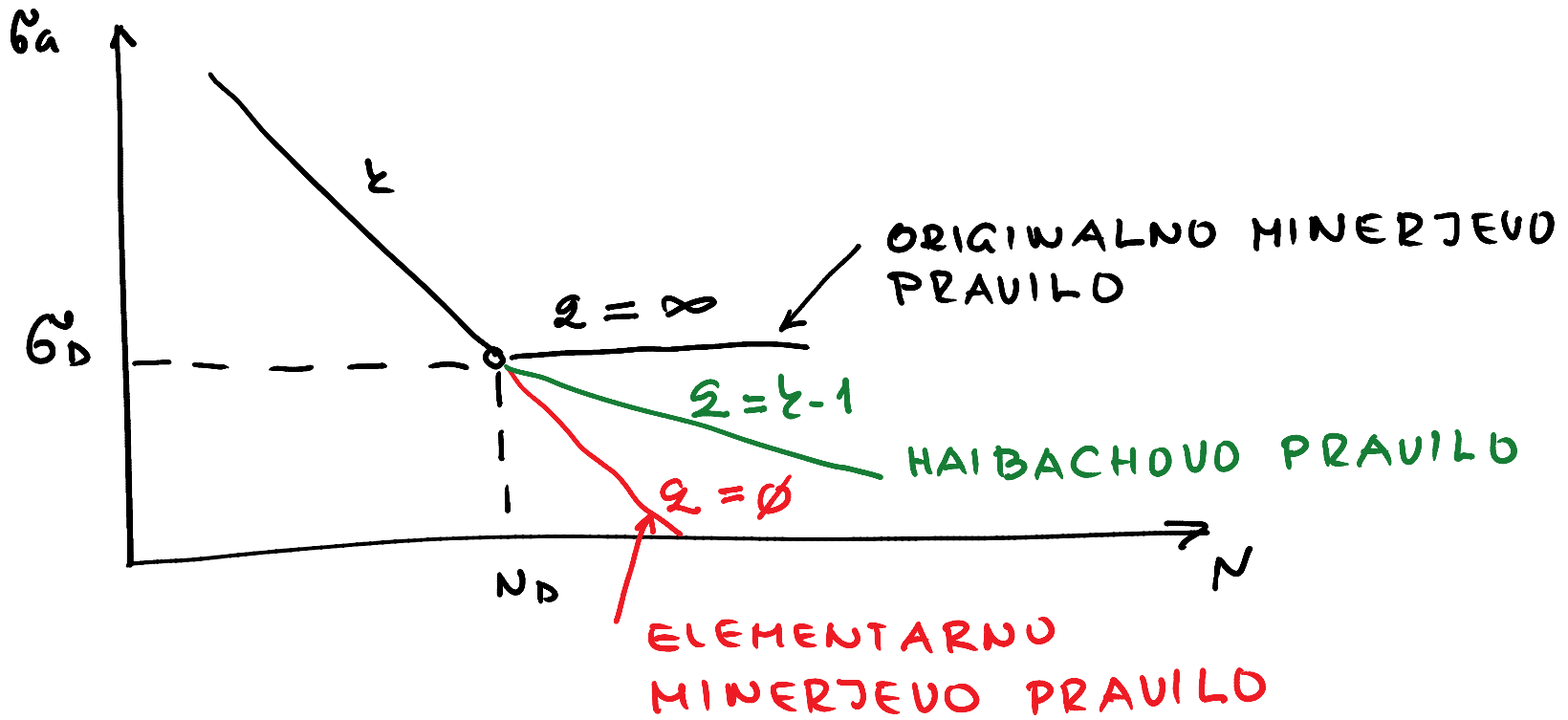
$$D_2 = \frac{n_2'}{N_2} = \frac{n_2(1-D)}{N_2} = \frac{n_2}{N_{f2}} \quad \text{KJER JE } N_f = \frac{N}{(1-D)}$$

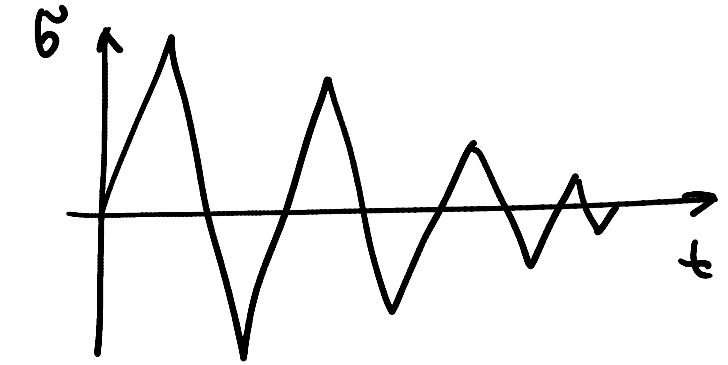
N_f FIKTIVNO ŠTEVILO OBREMENITVENIH CIKLOV DO KRITIČNE POŠKODBE

$$N_f = \frac{N \;(1)}{1-D \;(4)} = N_D \left(\frac{\sigma_a}{\sigma_D}\right)^{-k} \left(\frac{\sigma_D'}{\sigma_D}\right)^{-2} = N_D \left(\frac{\sigma_a}{\sigma_D}\right)^{-(k+2)}$$

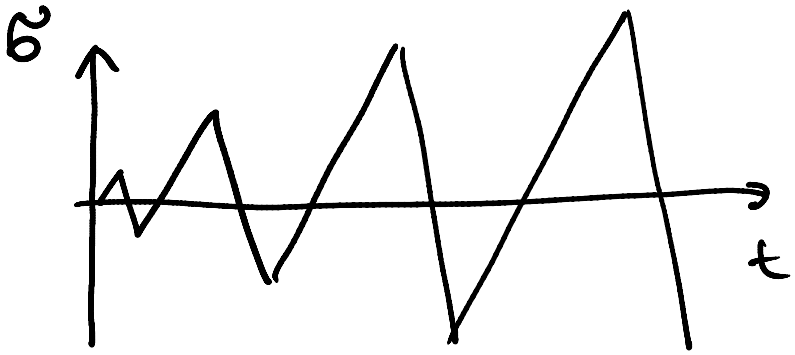
$$\left(\frac{\sigma_D'}{\sigma_D}\right)^{2} = 1 - D \quad ; \quad \sigma_D' = \sigma_a$$

$$D_2 = \frac{n_2}{N_{f2}} \; ; \; N_{f2} = N_D \left(\frac{\sigma_{a2}}{\sigma_D}\right)^{-(k+2)}$$ VELJA, ČE JE $\sigma_{a2} < \sigma_D$

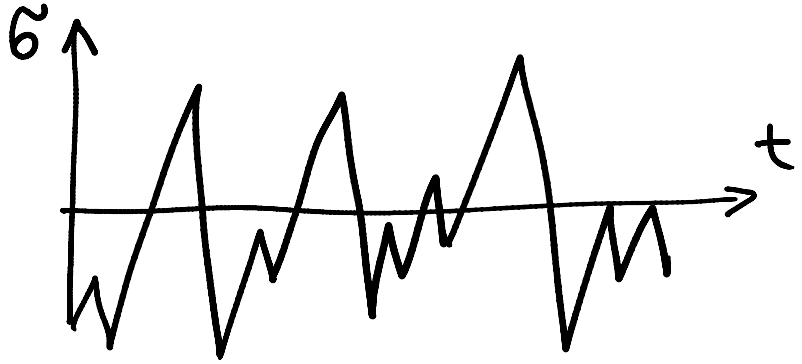

σ_a
k
σ_D
$q = \infty$
ORIGINÁLNÍ MINERJEVO PRAVIDLO
$q = k-1$
HAIBACHOVO PRAVIDLO
$q = 0$
N_D
N
ELEMENTÁRNÍ
MINERJEVO PRAVIDLO



ELEMENTARNÍ MINERÁLNÍ PRAVIDLO



ORIGINÁLNÍ MINERÁLNÍ PRAVIDLO



HAIBACHOVO PRAVIDLO