APREKINI

$I_1 := 0.9$ $\Delta I := 0.025$

$I_2 := 1.9$ $r := 0.36$ $\delta_r := 0.005$

$I_3 := 2.9$ $n := 3$

$I_4 := 3.9$ $\mu_0 := 1.2566 \cdot 10^{-6}$

$I_5 := 4.9$ $\delta_\mu := 1 \cdot 10^{-6}$

$\varphi_1 := \frac{(360 - 332) + 24}{2} \cdot deg$ $\varphi_1 = 0.454$ $\delta_\varphi := 2$

$\varphi_2 := \frac{(360 - 320) + 40}{2} \cdot deg$ $\varphi_2 = 0.698$

$\varphi_3 := \frac{(360 - 308) + 50}{2} \cdot deg$ $\varphi_3 = 0.89$

$\varphi_4 := \frac{(360 - 300) + 60}{2} \cdot deg$ $\varphi_4 = 1.047$

$\varphi_5 := \frac{(360 - 290) + 64}{2} \cdot deg$ $\varphi_5 = 1.169$

Sitematiskas kludas

$\varphi_\beta := 1.96$

$\Delta\varphi := \frac{\delta_\varphi}{3} \cdot \varphi_\beta \cdot deg$

$\Delta\varphi = 1.307\ deg$

$\varepsilon := \frac{\Delta\varphi}{\varphi_1} \cdot 100$ $\varepsilon = 5.026$

$r_\beta := 1.96$

$\Delta r := \frac{\delta_r}{3} \cdot r_\beta$

$\Delta r = 3.267 \times 10^{-3}$

$B_{01} := \frac{\mu_0 \cdot n \cdot I_1}{2 \cdot r \cdot \tan(\varphi_1)}$ $B_{01} = 9.662 \times 10^{-6}$

$B_{02} := \frac{\mu_0 \cdot n \cdot I_2}{2 \cdot r \cdot \tan(\varphi_2)}$ $B_{02} = 1.186 \times 10^{-5}$

$B_{03} := \frac{\mu_0 \cdot n \cdot I_3}{2 \cdot r \cdot \tan(\varphi_3)}$ $B_{03} = 1.23 \times 10^{-5}$

$B_{04} := \frac{\mu_0 \cdot n \cdot I_4}{2 \cdot r \cdot \tan(\varphi_4)}$ $B_{04} = 1.179 \times 10^{-5}$

$B_{05} := \frac{\mu_0 \cdot n \cdot I_5}{2 \cdot r \cdot \tan(\varphi_5)}$ $B_{05} = 1.089 \times 10^{-5}$

$B_0 := \frac{B_{01} + B_{02} + B_{03} + B_{04} + B_{05}}{5}$ $B_0 = 1.13 \times 10^{-5}$

Parciala kluda

$$\Delta B_{0I} := \frac{d}{dI_1}\left(\frac{\mu_0 \cdot n \cdot I_1 \cdot \Delta I}{2 \cdot r \cdot \tan(\varphi_1)}\right) \qquad \Delta B_{0I} = 2.6837623 \times 10^{-7}$$

$$\Delta B_{0\varphi} := \frac{d}{d\varphi_1}\left(\frac{\mu_0 \cdot n \cdot I_1 \cdot \Delta \varphi}{2 \cdot r \cdot \tan(\varphi_1)}\right) \qquad \Delta B_{0\varphi} = -5.592 \times 10^{-7}$$

$$\Delta B_{0r} := \frac{d}{dr}\left(\frac{\mu_0 \cdot n \cdot I_1 \cdot \Delta r}{2 \cdot r \cdot \tan(\varphi_1)}\right) \qquad \Delta B_{0r} = -8.767 \times 10^{-8}$$

$$\Delta B_0 := \sqrt{\Delta B_{0I}{}^2 + \Delta B_{0\varphi}{}^2 + \Delta B_{0r}{}^2} \qquad \Delta B_0 = 6.265 \times 10^{-7}$$

$$\varepsilon := \frac{\Delta B_0}{B_0} \qquad \varepsilon = 5.545\,\%$$

Rezultats:

$B = 1.13 \cdot 10^{-5} \pm 6.265 \cdot 10^{-7}$ pie $\beta = 0.95$ $\varepsilon = 5.545\,\%$