Useful conversion between magnet (physical) and Elegant (geometric) units

Solenoid	$B[G] = 3.3356 \times 10^{1} * \beta E[MeV] * K[m^{-1}]$
Dipole	$BL[G\text{-}cm] = 3.3356 \times 10^{3}\ \beta E[MeV] * \sin(\theta)$
Quadrupole	$B[G] = 3.3356 \times 10^{-1} * \beta E[MeV] * K[m^{-2}] * L[cm]$
Reminder	$p[MeV/c] = \beta E[MeV]$

Quadrupole design strengths for HDIce layout

Solenoid	$B[G] = 3.3356 \times 10^{1} * \beta E[MeV] * K[m^{-1}]$
Dipole	$BL[G\text{-}cm] = 3.3356 \times 10^{3}\ \beta E[MeV] * \sin(\theta)$
Quadrupole	$B[G] = 3.3356 \times 10^{-1} * \beta E[MeV] * K[m^{-2}] * L[cm]$
Reminder	$p[MeV/c] = \beta E[MeV]$

Transport Quads	$\lvert K[m^{-2}]\rvert < 5$	$\lvert B[G]\rvert < 250$	(E=10MeV, L=15cm)
Dispersion Quads	$K[m^{-2}] \sim -22m$	$B[G] \sim 1100$	(E=10MeV, L=15cm)

Suitable CEBAF quadrupole types for HDIce layout

Solenoid	$B[G] = 3.3356 \times 10^{1} * \beta E[MeV] * K[m^{-1}]$
Dipole	$BL[G\text{-}cm] = 3.3356 \times 10^{3}\ \beta E[MeV] * \sin(\theta)$
Quadrupole	$B[G] = 3.3356 \times 10^{-1} * \beta E[MeV] * K[m^{-2}] * L[cm]$
Reminder	$p[MeV/c] = \beta E[MeV]$

Transport Quads	$\lvert K[m^{-2}]\rvert < 5$	$\lvert B[G]\rvert < 250$	(E=10MeV, L=15cm)
Dispersion Quads	$K[m^{-2}] \sim -22m$	$B[G] \sim 1100$	(E=10MeV, L=15cm)

Type MQJ	B = 590 G @ 10 A
Type MQD	B = 3200 G @ 10 A