Calculate the magnetic field of bending magnet

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According to

$$Bqv = \frac{mv^2}{r} \tag{1}$$

$$E_k = \frac{1}{2}mv^2 = Uq \tag{2}$$

we can deduce

$$B = \begin{cases} \frac{\sqrt{2}}{r}\sqrt{\frac{m}{q}}\sqrt{U} & \mathrm{q} > 0 \\ -\frac{\sqrt{2}}{r}\sqrt{-\frac{m}{q}}\sqrt{-U} & \mathrm{q} < 0 \end{cases} \tag{3}$$

If units are given:

$$U : [\mathrm{kV}], \qquad 1\,\mathrm{kV} = 10^3\,\mathrm{V} \tag{4}$$

$$m : [\mathrm{amu}], \qquad 1\,\mathrm{amu} = 1.67 \times 10^{-27}\,\mathrm{kg} \tag{5}$$

$$q : [\mathrm{e}], \qquad 1\,\mathrm{e} = 1.6 \times 10^{-19}\,\mathrm{C} \tag{6}$$

$$r : [\mathrm{cm}], \qquad 1\,\mathrm{cm} = 10^{-2}\,\mathrm{m} \tag{7}$$

$$B = \begin{cases} \frac{\sqrt{2}}{r[\mathrm{cm}]10^{-2}}\sqrt{\frac{m[\mathrm{amu}]}{q[\mathrm{e}]}}\sqrt{\frac{1.67\times10^{-27}}{1.6\times10^{-19}}}\sqrt{U[\mathrm{kV}]}10^{\frac{3}{2}} & \mathrm{q} > 0 \\ -\frac{\sqrt{2}}{r[\mathrm{cm}]10^{-2}}\sqrt{-\frac{m[\mathrm{amu}]}{q[\mathrm{e}]}}\sqrt{\frac{1.67\times10^{-27}}{1.6\times10^{-19}}}\sqrt{-U[\mathrm{kV}]}10^{\frac{3}{2}} & \mathrm{q} < 0 \end{cases} \tag{8}$$

$$= \begin{cases} \frac{0.457}{r[\mathrm{cm}]}\sqrt{\frac{m[\mathrm{amu}]}{q[\mathrm{e}]}}\sqrt{U[\mathrm{kV}]}[\mathrm{T}] & \mathrm{q} > 0 \\ -\frac{0.457}{r[\mathrm{cm}]}\sqrt{-\frac{m[\mathrm{amu}]}{q[\mathrm{e}]}}\sqrt{-U[\mathrm{kV}]}[\mathrm{T}] & \mathrm{q} < 0 \end{cases} \tag{9}$$

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Ion	$\frac{m}{q}$	r[cm]	U[kV]	B[T]
H_2^{2+}	1	57	7	0.021
H_2^{+}	2	57	7	0.030
O^{2-}	-8	57	-7	-0.060
Ne^{+}	20	57	7	0.095
N_2^{+}	28	57	7	0.112
O_2^{+}	32	57	7	0.120
Ar^{+}	40	57	7	0.134