

Cross product through Fleming's left hand rule

based on my No.51, Unit of my universe

March 12, 2023 Yuji Masuda

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Abstract

In explaining matters not explained in my previous post No. 51, especially electricity, I will mention a special method of calculation called vector product.

General comments

In particular, the unit of charge, the coulomb, is defined as 3.

<div style="color: red; font-size: 2em; margin-bottom: 5px;">↓</div> <table style="border: 1px solid red; padding: 5px;"> <tr><td style="padding: 2px 10px;">1</td><td style="padding: 2px 10px;">→</td><td style="padding: 2px 10px;"></td><td style="padding: 2px 10px;">[rad]</td></tr> <tr><td style="padding: 2px 10px;">2</td><td style="padding: 2px 10px;">→</td><td style="padding: 2px 10px;">i</td><td style="padding: 2px 10px;">[s]</td></tr> <tr><td style="padding: 2px 10px;">3</td><td style="padding: 2px 10px;">→</td><td style="padding: 2px 10px;">e(=±∞)</td><td style="padding: 2px 10px;">[m]</td></tr> <tr><td style="padding: 2px 10px;">4</td><td style="padding: 2px 10px;">→</td><td style="padding: 2px 10px;">π</td><td style="padding: 2px 10px;">[kg]</td></tr> </table>	1	→		[rad]	2	→	i	[s]	3	→	e(=±∞)	[m]	4	→	π	[kg]	→	$F = \frac{1}{4\pi\epsilon_0} \cdot \frac{q_1 \cdot q_2}{r^2} = F = 3$ $\frac{1}{4\pi \left(\frac{1}{\mu_0}\right) \left(\frac{1}{C^2}\right)} \cdot \frac{q_1 \cdot q_2}{r^2} = \frac{1}{4 \times 4 \times \left(\frac{3^2}{3 \times 2^2}\right) \times \left(\frac{2}{3}\right)^2} \cdot \frac{3 \times 3}{3 \times 3}$ $= \frac{1}{16 \times \frac{3}{4} \times \frac{4}{9}} = \frac{3}{16} = \frac{3}{1} = 3 = F$
1	→		[rad]															
2	→	i	[s]															
3	→	e(=±∞)	[m]															
4	→	π	[kg]															

$$\therefore [A] = \frac{[C]}{[s]} = \frac{3}{2} = \frac{8}{2} = 4, [B] = \frac{[A]}{[m]} = \frac{4}{3} = \frac{9}{3} = 3$$

Therefore, applying Fleming's left-hand rule,

$$F = q(v \otimes B) = 3(4 \otimes 3)$$

Cross product

$$3(4 \otimes 3) = 3 \cdot 4 \cdot 3 \cdot 3 = 12 \cdot 9 = 2 \cdot 4 = 8 = 3 = F$$

From the present results, it was found that the method of calculating the vector product associated with () is similar to that of the distributive law.