Statement of force on a moving charge in a magnetic field

Force is proportional to

- Magnetic field
- Charge
- Velocity component perpendicular to the field

Derivation for expression of force on a moving charge in a magnetic field

- $$F \alpha B q v \sin\theta$$
- $$F = k q v B \sin\theta$$

Expression of force on a moving charge in a magnetic field

- $$F = k q v B \sin\theta$$

Vector form of expression of force on a moving charge in a magnetic field

- $$\vec{F} = q(\vec{v} \times \vec{B})$$

Condition for minimum force on a moving charge in a magnetic field

- Angle 0
- Angle 180
- Stationary

Condition for maximum force on a moving charge in a magnetic field

- Perpendicular

Parameter represented by fingers in right hand palm rule

- Magnetic field

Parameter represented by thumb in right hand palm rule

- Current

Parameter represented by palm in right hand palm rule

- Force

Organ representing magnetic field in right hand palm rule

- Fingers

Organ representing velocity of charge in right hand palm rule

- Thumb

Organ representing direction of force in right hand palm rule

- Palm

Magnetic field in terms of force

Force on unit charge unit velocity perpendicular to field

One tesla in terms of lorentz force

1C charge 1 m/s velocity perpendicular to field experince 1 N force

Expression for 1 gauss

$$1gauss = 10^{-4}tesla$$

Magnitude of magnetic field at the surface of neutron star

$$10^{8}$$

Magnitude of magnetic field at the large field in the labratory

$$1$$

Magnitude of magnetic field at the field near a bar magnet

$$10^{-2}$$

Magnitude of magnetic field on the earth's surface

$$10^{-4}$$

Magnitude of magnetic field in interstellar space

$$10^{-12}$$