

The Lorentz force law is:

$$\vec{F} = q \vec{E} + q \vec{v} \times \vec{B} \quad (1)$$

Translate this equation into words. Possibly one sentence for each term on the RHS.

Solution The force on a charge in the presence of an electric field is equal to the charge (both sign and magnitude) times the value of the electric field vector at the point where the charge is. This part of the force is in the same direction as the electric field.

The force on a charge in the presence of a magnetic field is equal to the charge (both sign and magnitude) times the cross product of the velocity of the particle and the value of the magnetic field vector at the point where the charge is. This part of the force is perpendicular to both the velocity of the particle and the magnetic field.