Electric Force

PHYS2102

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Contents

1 Introduction

1.1 Electric Charge

1.1.1 Positive - Type 1 (Protons)

1.1.2 Negative - Type 2 (Electrons)

1.1.3 Behavior

- Two charges of the same kind **repel**; two opposite charges **attract**
- **Neutral** objects are attracted to a charge of either sign.
- Charges can be transferred from one object to another - **Charging**

- Charge is conserved

1.1.4 Conductors

Materials through which charge moves **easily**

1.1.5 Insulators

Materials on or in which charge is immobile

1.2 Coulomb's Law

Coulomb's law is the fundamental law for the electric force between two charged particles. Coulomb's law, like Newton's law of gravity, is an **inverse-square law**: The electric force is inversely proportional to the square of the distance between charges. *

2 Coulomb's Law

2.1 If two charged particles having q1 and q2 are a distance r apart, the particles exert forces on each other of magnitude

$$\frac{K * |q1| * |q2|}{d^2}$$