Chapter 2 : Electrostatics

2.1 The Electric field :

2.1.1 Properties of electric charges

i) two kind "+" and "−" which can be added algebraically

ii) conservation of total charges. High degree of neutralization

iii) quantization of charge. ~~[illegible]~~

$1e = 1.6 \times 10^{-19} C$ (Coulomb)

electron charge $-1e$

proton charge $1e$

e is very small, for large charge accumulations it's very useful to use continuous charges distribution (similar to water being treated as continuous media even though it's made of H_2O molecules)

charge density $\rho = \frac{\Delta q}{\Delta V}$ $\Delta V \to 0$

surface charge density $\sigma = \frac{\Delta q}{\Delta a}$ $\Delta a \to 0$

linear charge density $\lambda = \frac{\Delta q}{\Delta l}$ $\Delta l \to 0$