



PHYSICS NOTEBOOK — Day 3 Update

Chapter: Electrostatics

Electric Field Lines — Properties

- Start from + charges and end on – charges
- Never intersect
- Denser lines → stronger field
- Sparse lines → weaker field
- E is tangent to field line at any point
- For isolated + charge → lines radially outward
- For isolated – charge → lines radially inward
- Like charges → lines diverge
- Unlike charges → lines converge

Electric Flux (Φ)

- $\Phi = E A \cos\theta$
- Scalar quantity
- SI Unit: $\text{N}\cdot\text{m}^2/\text{C}$
- $\Phi = 0$ when $\theta = 90^\circ$
- Φ increases if E or A increases
- Maximum flux when field is perpendicular ($\theta = 0^\circ$)