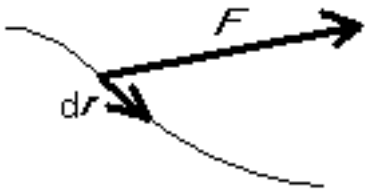
Introduction

Line integrals:

- work;



- potential energy;
- velocity potential
- ...

Path independence:

$$\int_A^B \vec{F} \cdot \mathrm{d}\vec{r}$$

is independent of the path between A and B when $\mathrm{curl}\vec{F} \equiv \mathrm{rot}\vec{F} \equiv \nabla \times \vec{F} = 0$.