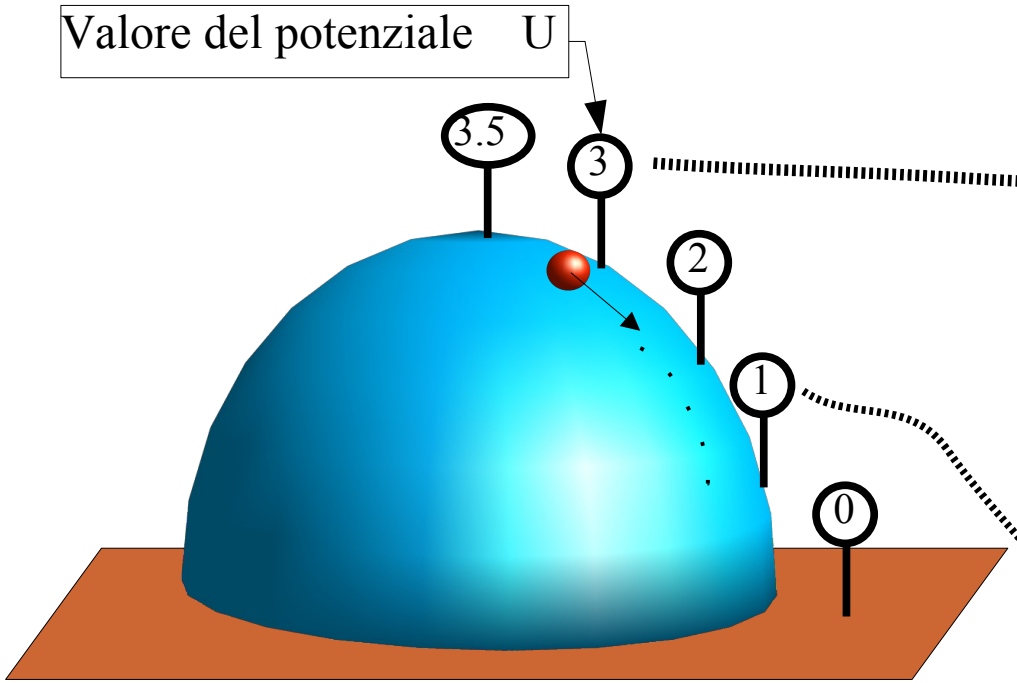
Energia
cosa e' l'energia potenziale

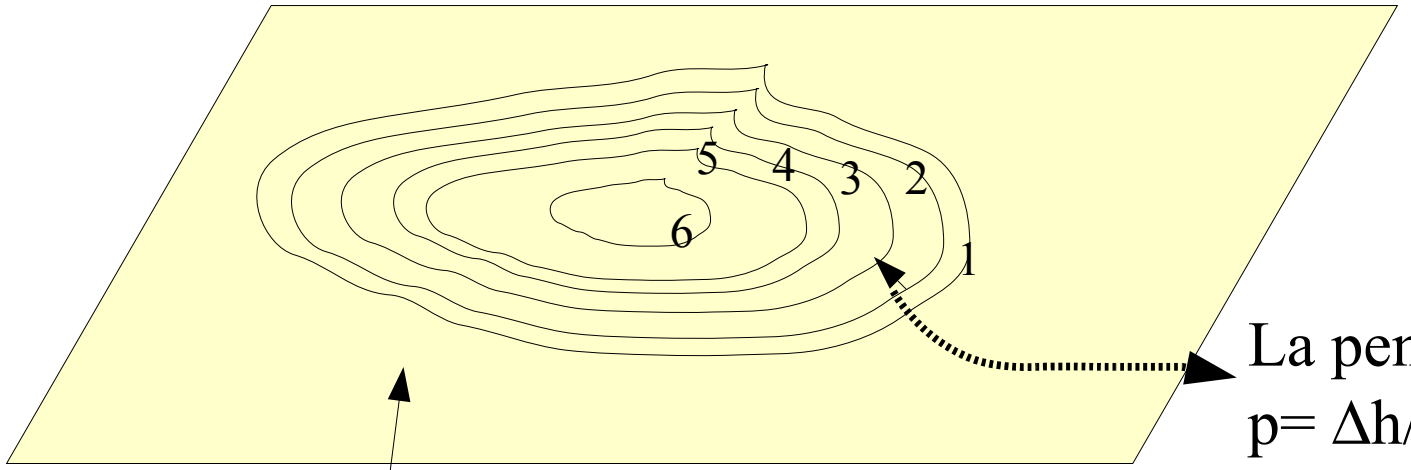


$E=T+U \implies \Delta T = -\Delta U$

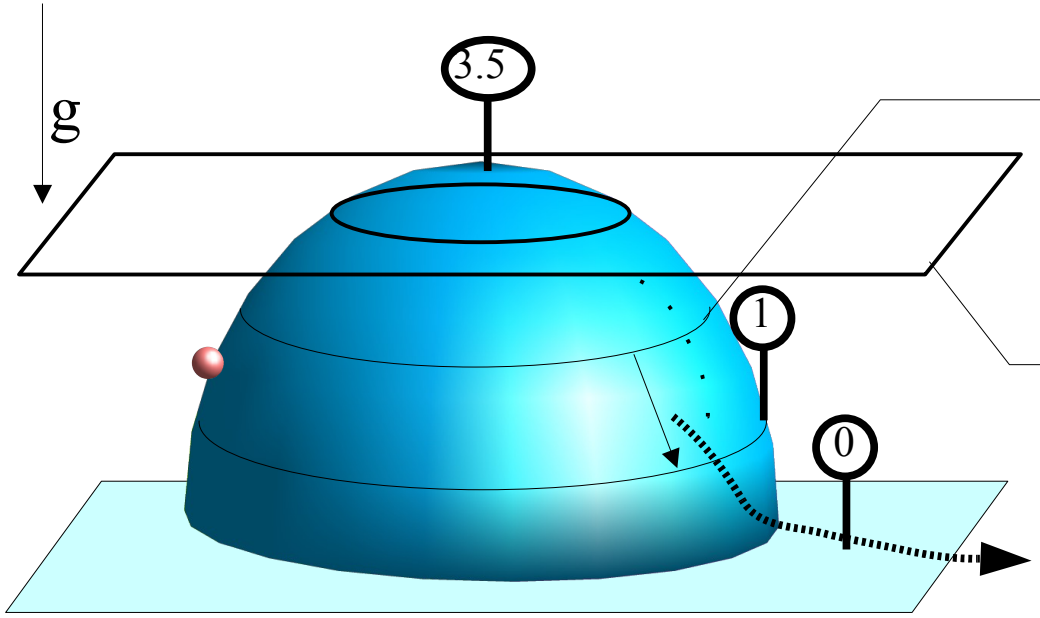
$T_1 - T_2 = \Delta T = -(U_1 - U_3) = -(1-3) = 2$

Energia
curve di livello

Luogo dei punti ad altezza costante ⇢ anche a potenziale costante



Energia
curve equipotenziali



curve equipotenziali

superficie equipotenziale

$$\vec{F}\cdot\Delta\vec{s}=U(\vec{P})-U(\vec{P}+\Delta\vec{s})$$

$$\vec{F}\cdot\Delta\vec{s}=0 \quad \text{sulle superficie}$$

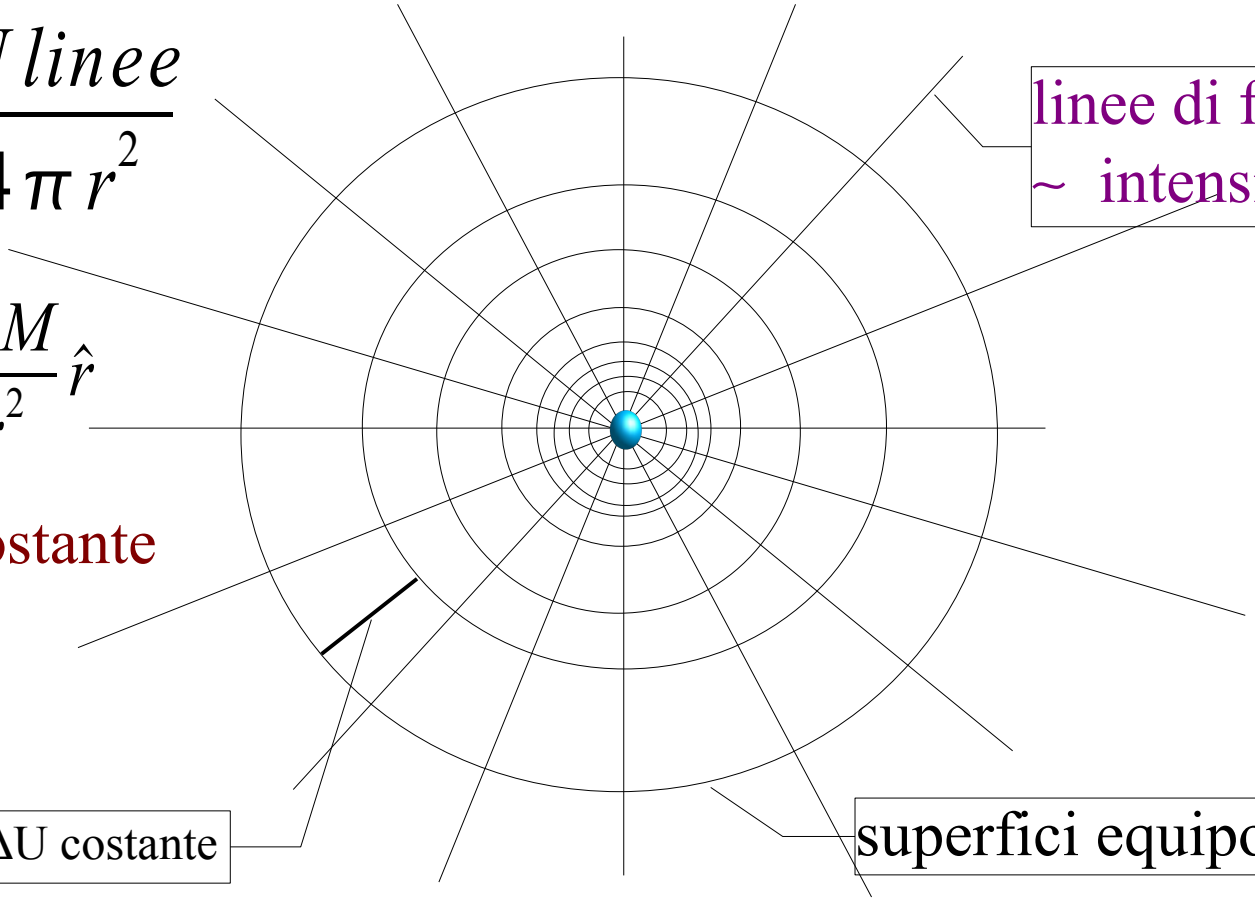
$$\text{da } \vec{F}=-\vec{\nabla}U \quad \text{segue } \vec{F}\perp \text{Superficie}$$

Energia
campo gravitazionale terrestre

$$F \approx \alpha \frac{N\,linee}{4\pi r^2}$$

$$\vec{F} = -G\frac{mM}{r^2}\hat{r}$$

N^0 linee costante



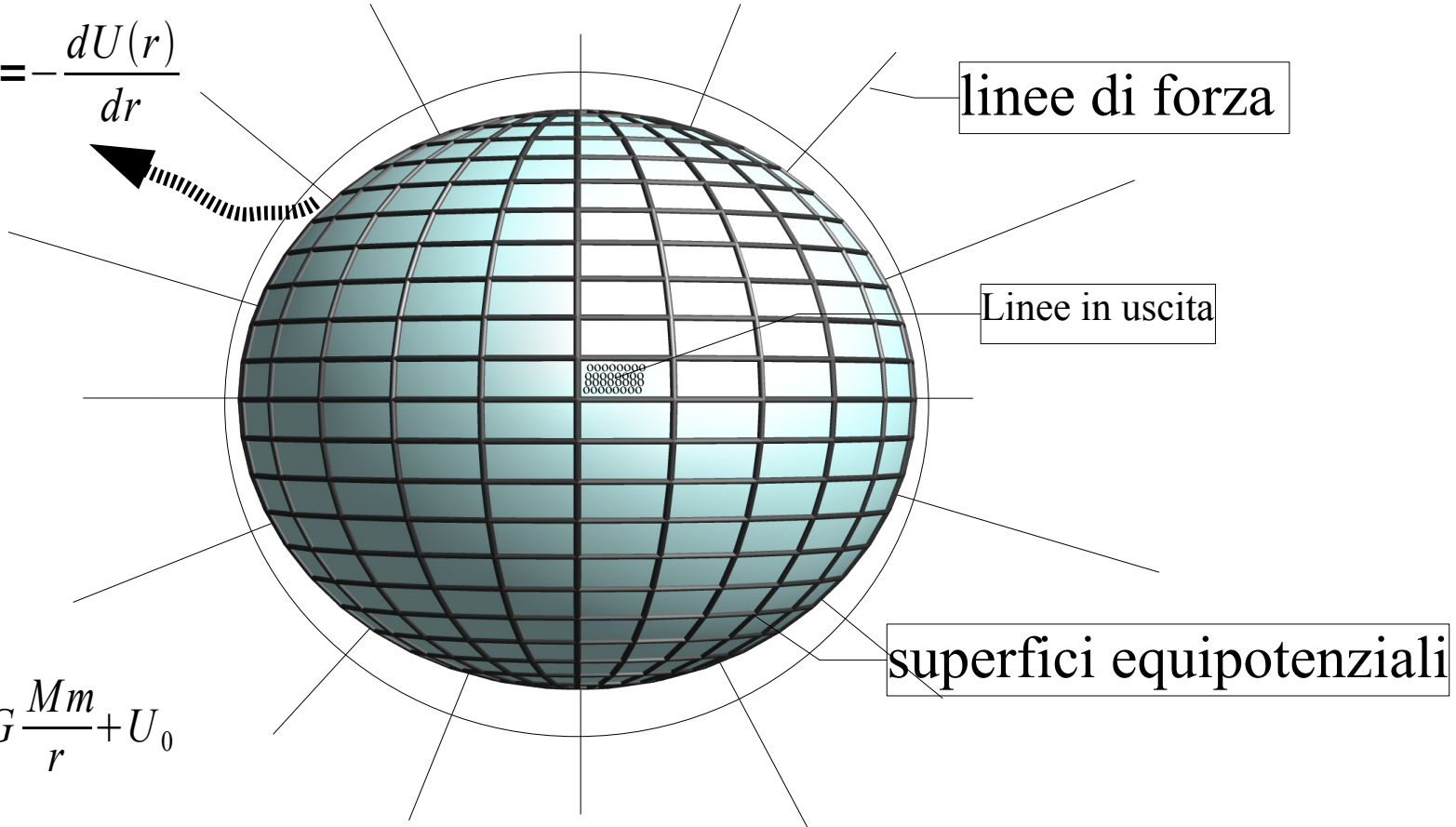
linee di forza
~ intensita'

Spaziatura a ΔU costante

superfici equipotenziali

Energia
campo gravitazionale terrestre

$$F_r \approx -\frac{1}{r^2} = -\frac{dU(r)}{dr}$$



$$U(r) = -G\frac{Mm}{r} + U_0$$

Energia
forza elastica

Caso unidimensionale

$$f = -k(x - x_0) \quad segue \quad U(x) = \frac{1}{2} k (x - x_0)^2$$

Caso tridimensionale

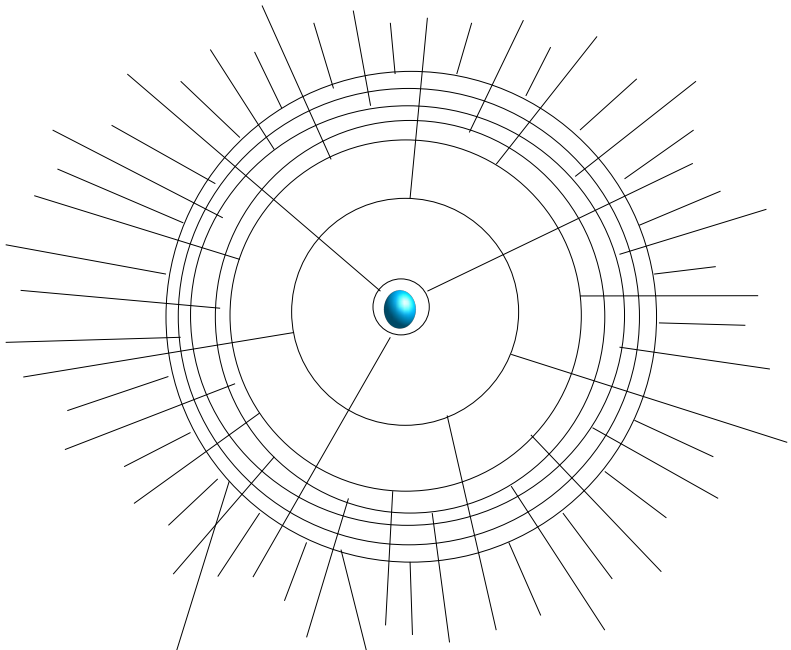
$$\vec{F} = -k\vec{r}$$

$$U(x, y, z) = \frac{1}{2} k x^2 + \frac{1}{2} k y^2 + \frac{1}{2} k z^2 = \frac{1}{2} k r^2$$

Energia
forza elastica

$$kr \approx \alpha \frac{N\ linee}{4\pi r^2}$$

$$N \approx r^3 \approx Volume$$



Spaziatura a ΔU costante

superfici equipotenziali