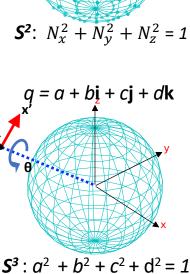


(c) 3D rotation



 S^1 : $\cos^2 \varphi + \sin^2 \varphi = 1$

 $\mathbf{\uparrow} \mathbf{y}$ (cos φ , sin φ)

 $[N_x, N_y, N_z]$