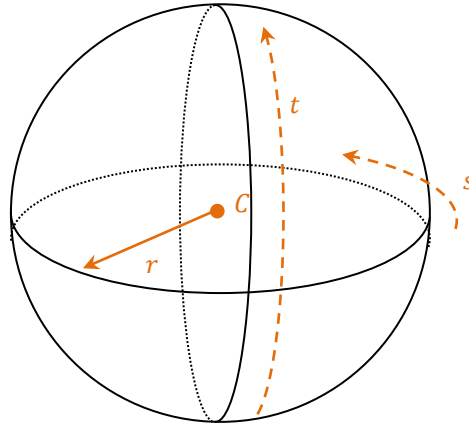


Parametric Sphere (Surface)

A parametric sphere surface can be defined by a center point C , a radius r , and two parameters s and t .



$$\begin{aligned}x &= x_c + r \cdot \cos(2\pi \cdot s) \cdot \sin\left(\pi \cdot t - \frac{\pi}{2}\right) \\y &= y_c + r \cdot \sin(2\pi \cdot s) \cdot \sin\left(\pi \cdot t - \frac{\pi}{2}\right) \\z &= z_c + r \cdot \cos\left(\pi \cdot t - \frac{\pi}{2}\right)\end{aligned}$$

This set of parametric equations is essentially a parameterized version of the spherical to Cartesian coordinate transform with a fixed radius.

An example sphere surface is shown drawn below. The surface is sampled evenly in s and t .

