



$$\gamma(\theta, \varphi) = (\cos \theta \cos \varphi, \cos \theta \sin \varphi, \sin \theta)$$

$$\frac{\partial \gamma}{\partial \theta} = (-\sin \theta \cos \varphi, -\sin \theta \sin \varphi, \cos \theta)$$

$$\frac{\partial \gamma}{\partial \varphi} = (-\cos \theta \sin \varphi, \cos \theta \cos \varphi, 0)$$

$$\frac{\partial \gamma}{\partial \theta} \times \frac{\partial \gamma}{\partial \varphi} = (-\cos^2 \theta \cos \varphi, \cos^2 \theta \sin \varphi, -\sin \theta \cos \theta)$$

$$\left| \frac{\partial \gamma}{\partial \theta} \times \frac{\partial \gamma}{\partial \varphi} \right| = \dots = \cos \theta$$

$$\int_0^{2\pi} \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos \theta d\theta d\varphi = 4\pi$$