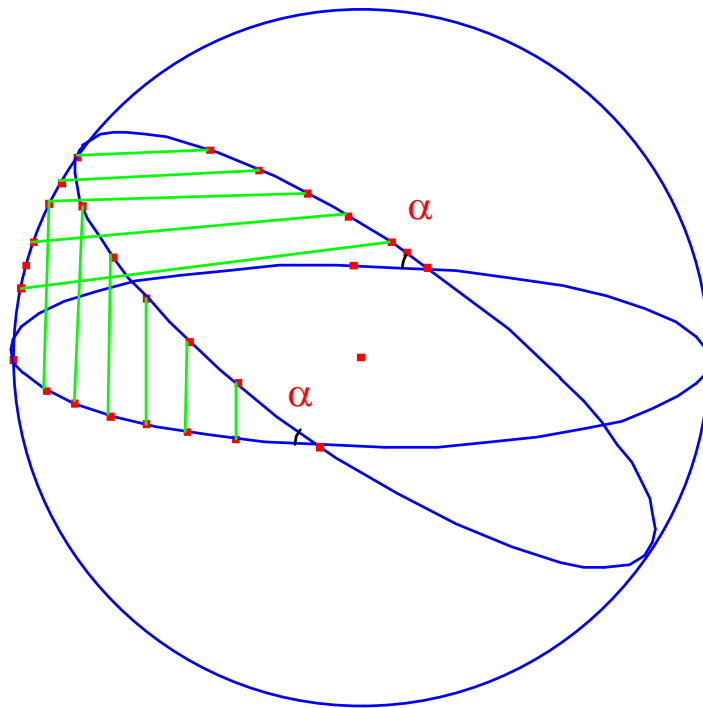


## Area della lunula

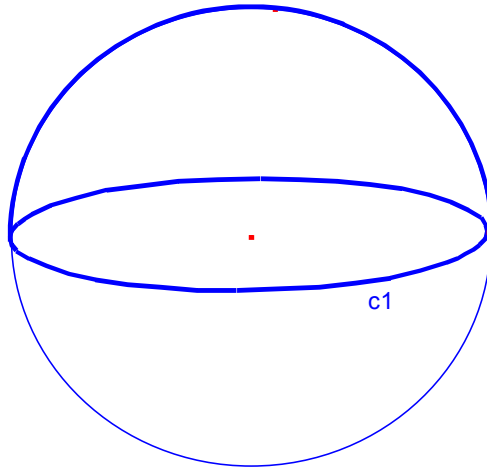
Area lunula :  $4 \pi R^2 = \alpha : 2 \pi$

Area lunula =  $4 \pi R^2 \alpha / 2 \pi = 2 \alpha R^2$

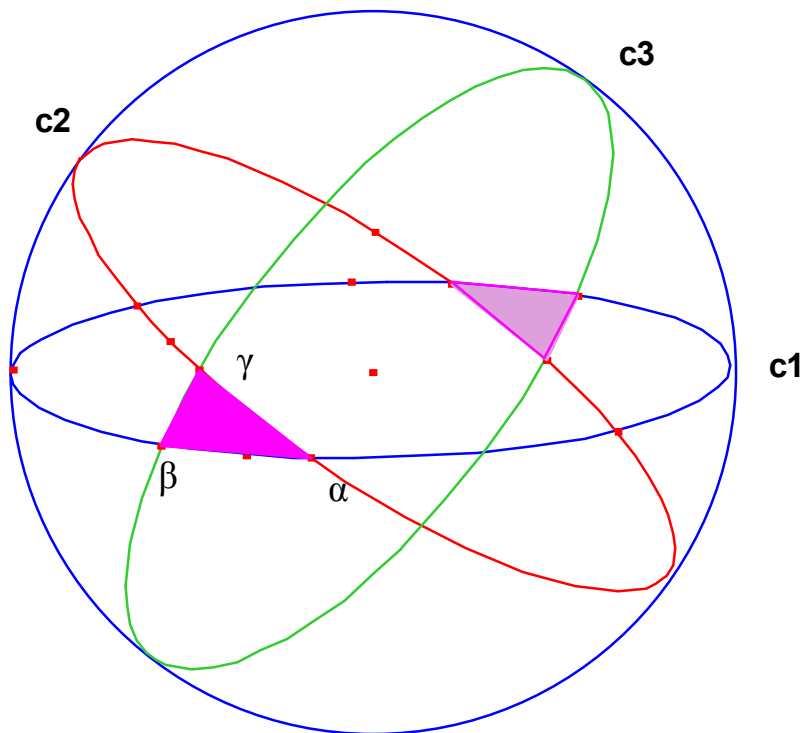


# Area del triangolo sferico

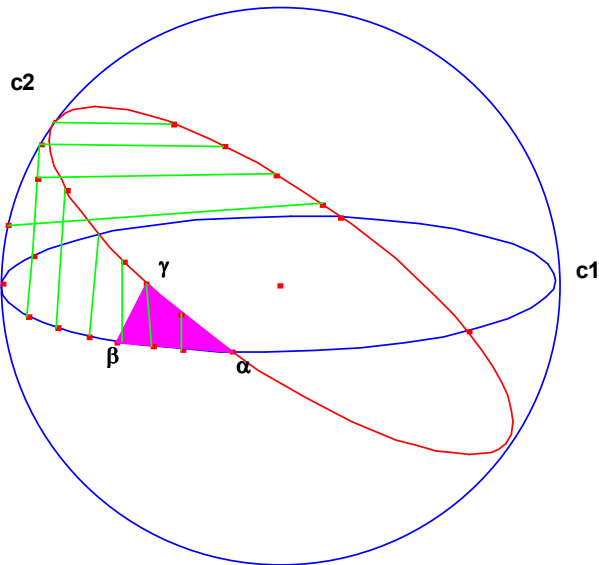
Consideriamo la seguente semisfera



e tracciamo altri due cerchi massimi. Si forma così il triangolo sferico di angoli  $\alpha$ ,  $\beta$ ,  $\gamma$  e di area  $A$ .



Ricopriamo la semisfera scelta con la somma delle lunule individuate dai cerchi massimi tracciati

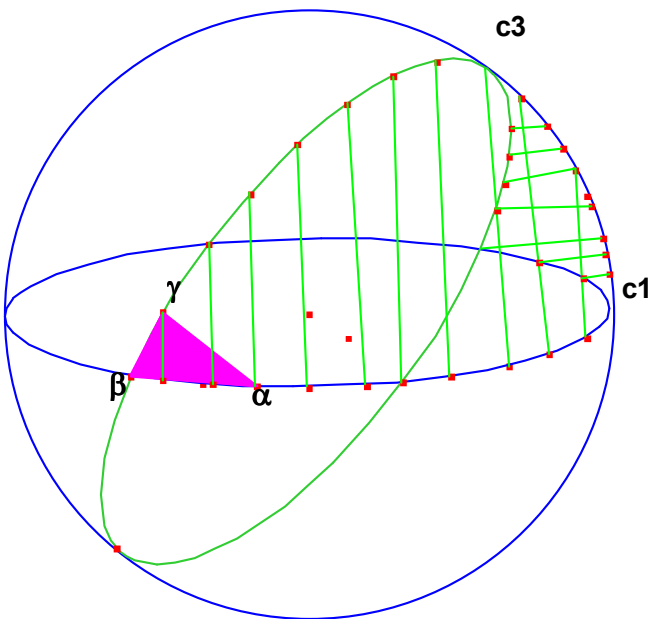


$$2 \pi R^2$$

$$=$$

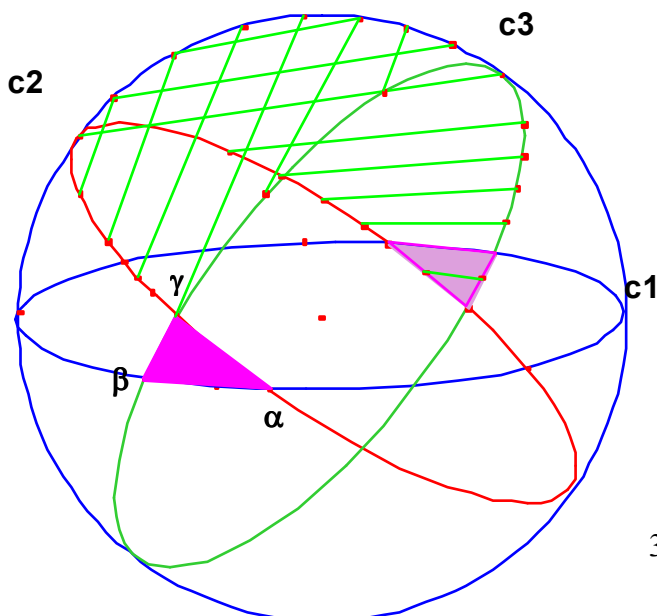
$$2 \alpha R^2$$

$$+$$



$$2 \beta R^2 - A$$

$$+$$



$$2 \gamma R^2 - A$$

quindi

$$2 \pi R^2 = 2 \alpha R^2 + 2 \beta R^2 + 2 \gamma R^2 - 2A$$

$$A = R^2 (\alpha + \beta + \gamma - \pi)$$

$$\text{Eccesso angolare} = (\alpha + \beta + \gamma - \pi) = \frac{A}{R^2}$$

$$\lim_{R \rightarrow \infty} \frac{A}{R^2} = 0$$

sfera  $\rightarrow$  piano