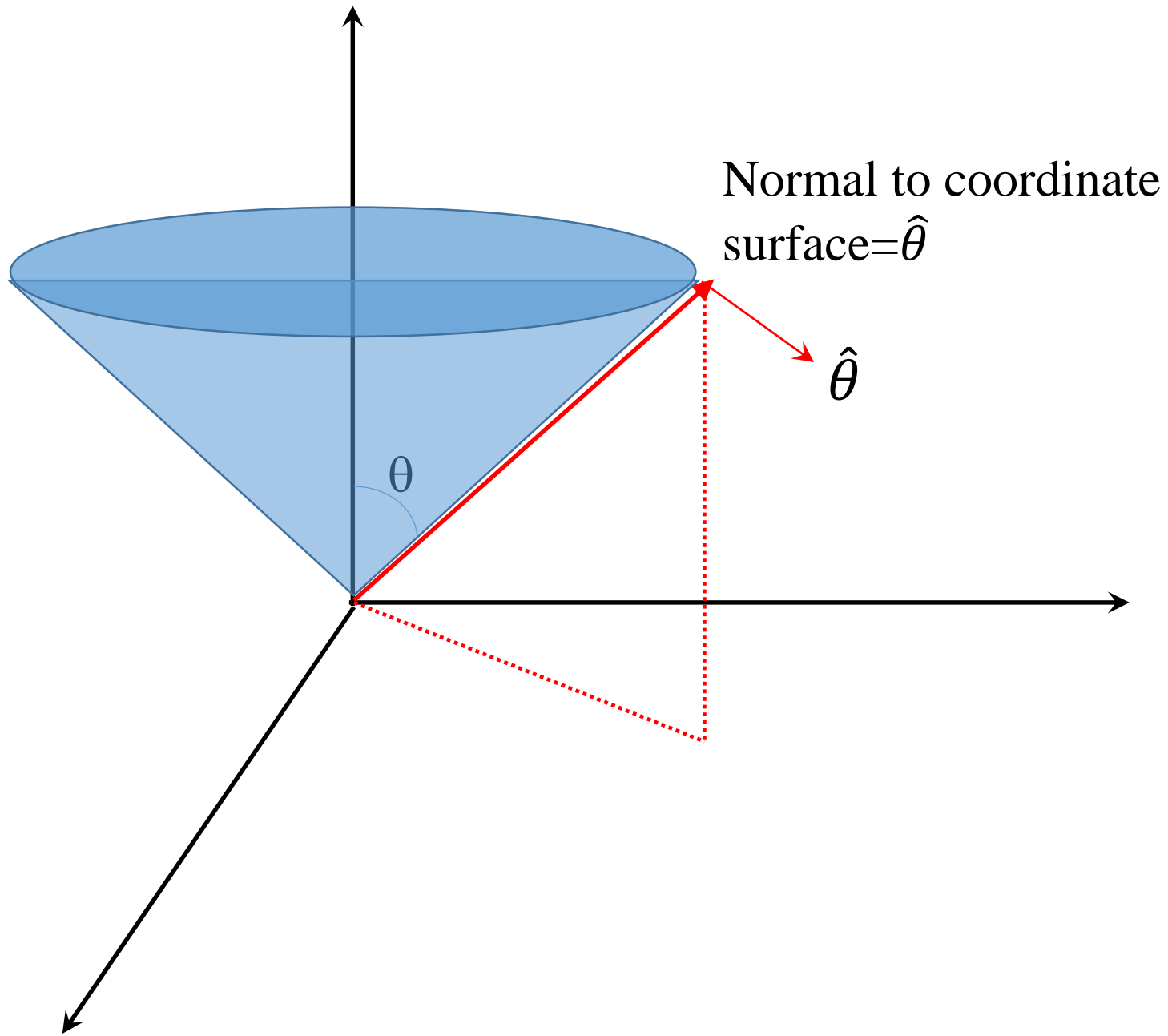


Co-ordinate surface

$r = \text{constant}$ : sphere

$\hat{r}$   
Normal to coordinate  
surface= $\hat{r}$

$r$



Co-ordinate surface

$\theta = \text{constant}$ : cone

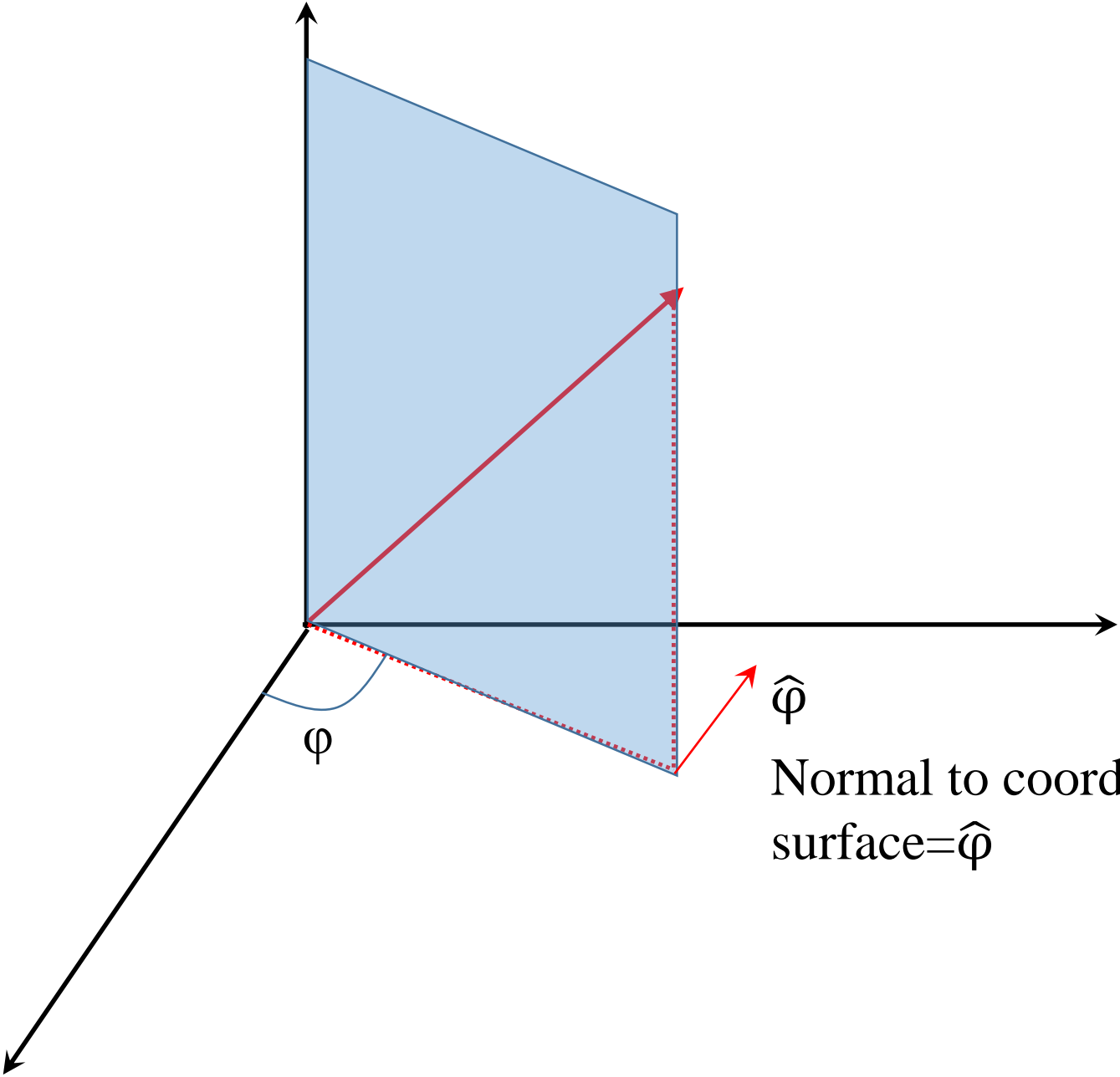
Normal to coordinate  
surface =  $\hat{\theta}$

$\hat{\theta}$

$\theta$

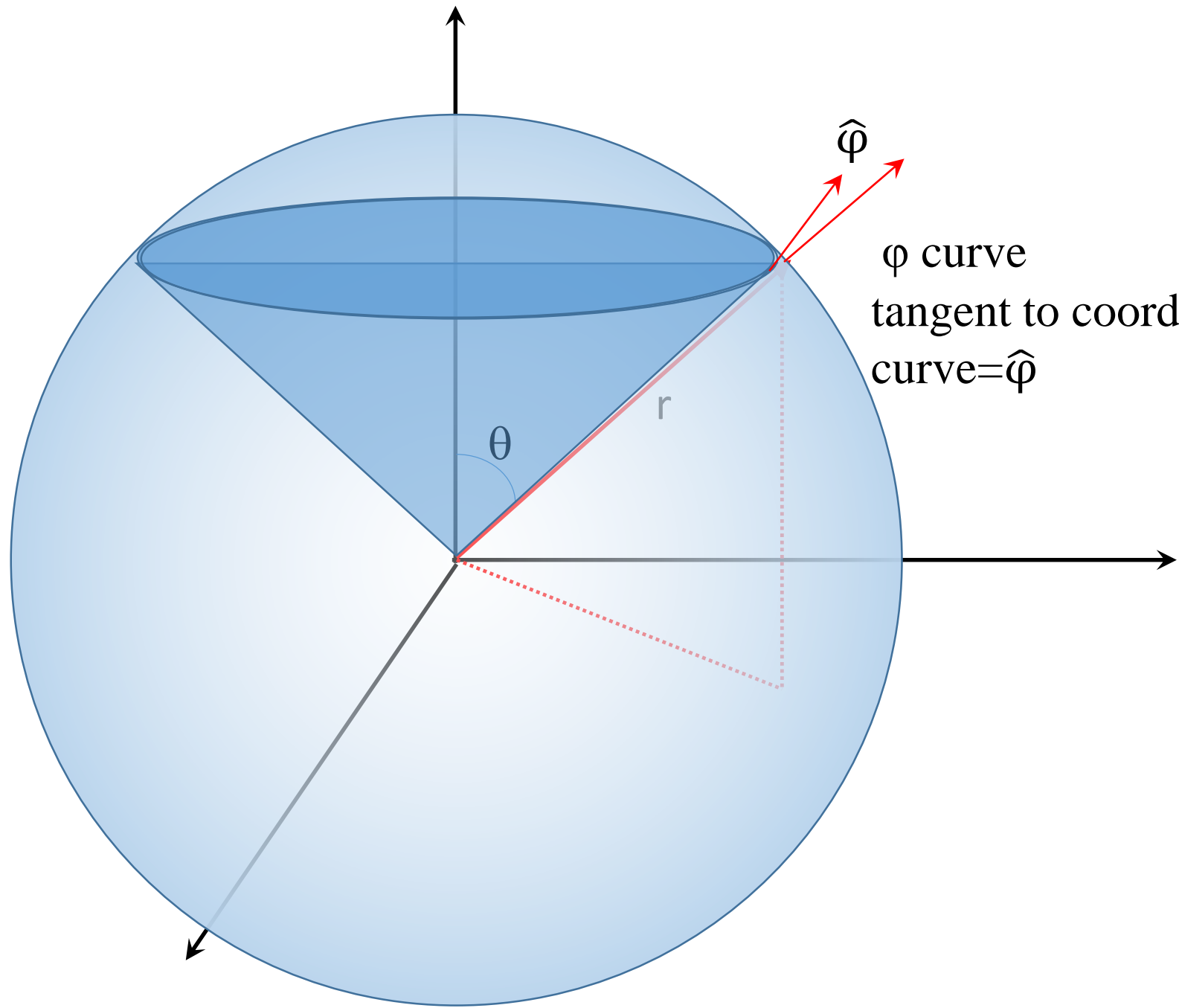
Co-ordinate surface

$\varphi = \text{constant}$ : plane



$\hat{\varphi}$

Normal to coordinate surface =  $\hat{\varphi}$

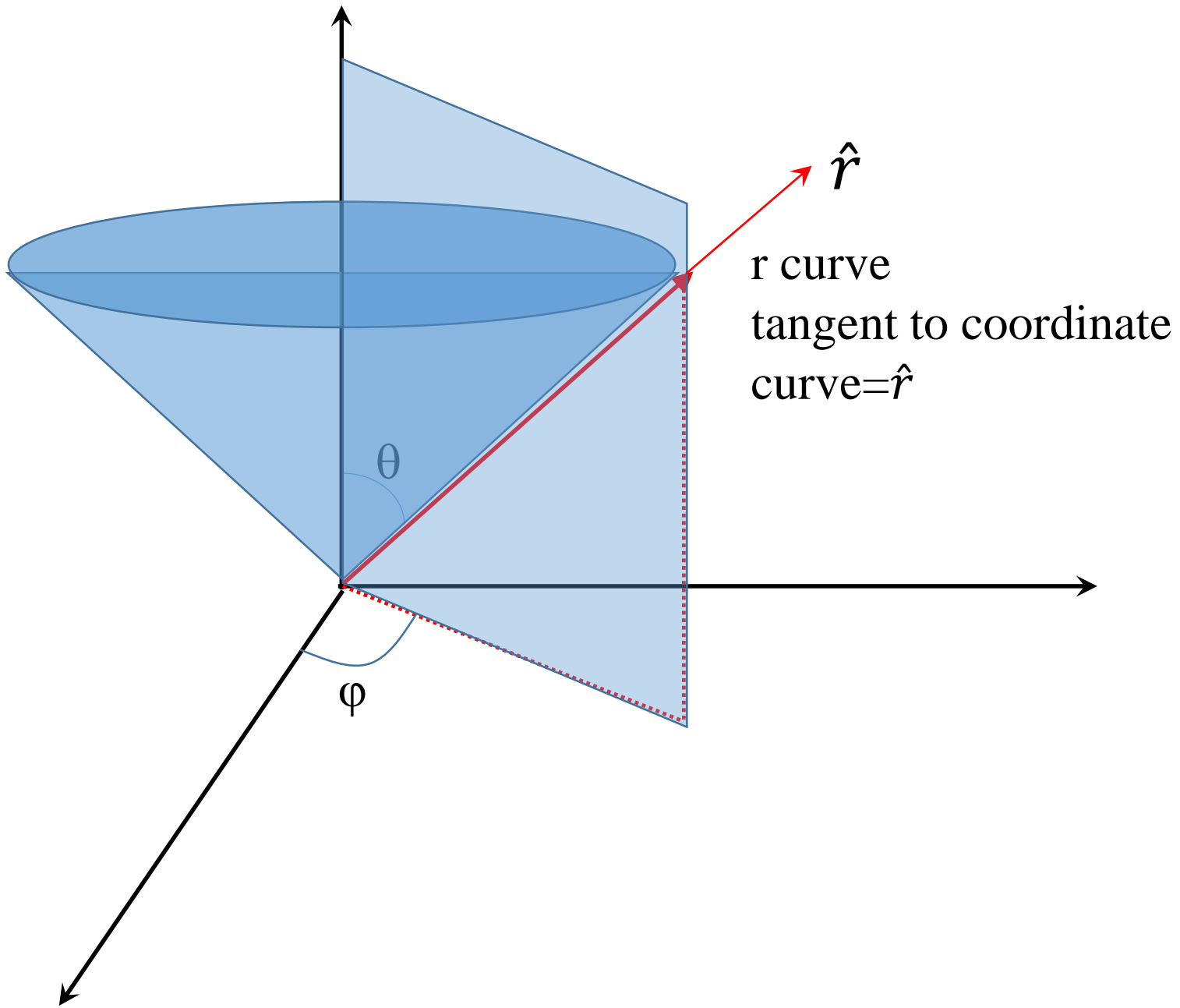


Co-ordinate curve

$r = \text{constant}$ : sphere

$\theta = \text{constant}$ : cone

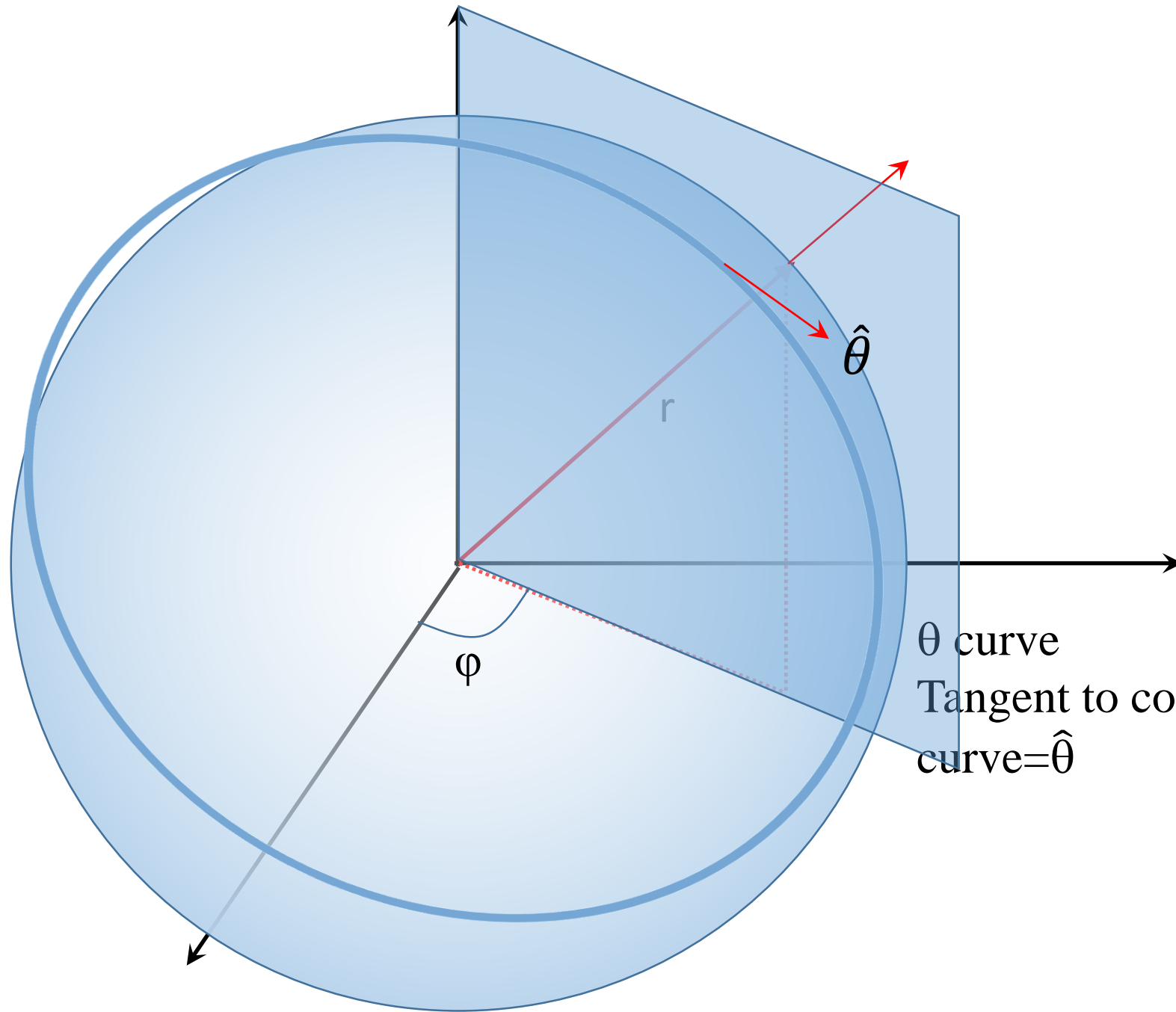
$\varphi$  curve  
tangent to coordinate  
curve =  $\hat{\varphi}$



Co-ordinate curve

$\theta$ =constant: cone

$\phi$ =constant: plane



Co-ordinate curve  
 $r = \text{constant}$ : sphere  
 $\varphi = \text{constant}$ : plane

$\theta$  curve  
Tangent to coordinate  
curve =  $\hat{\theta}$