

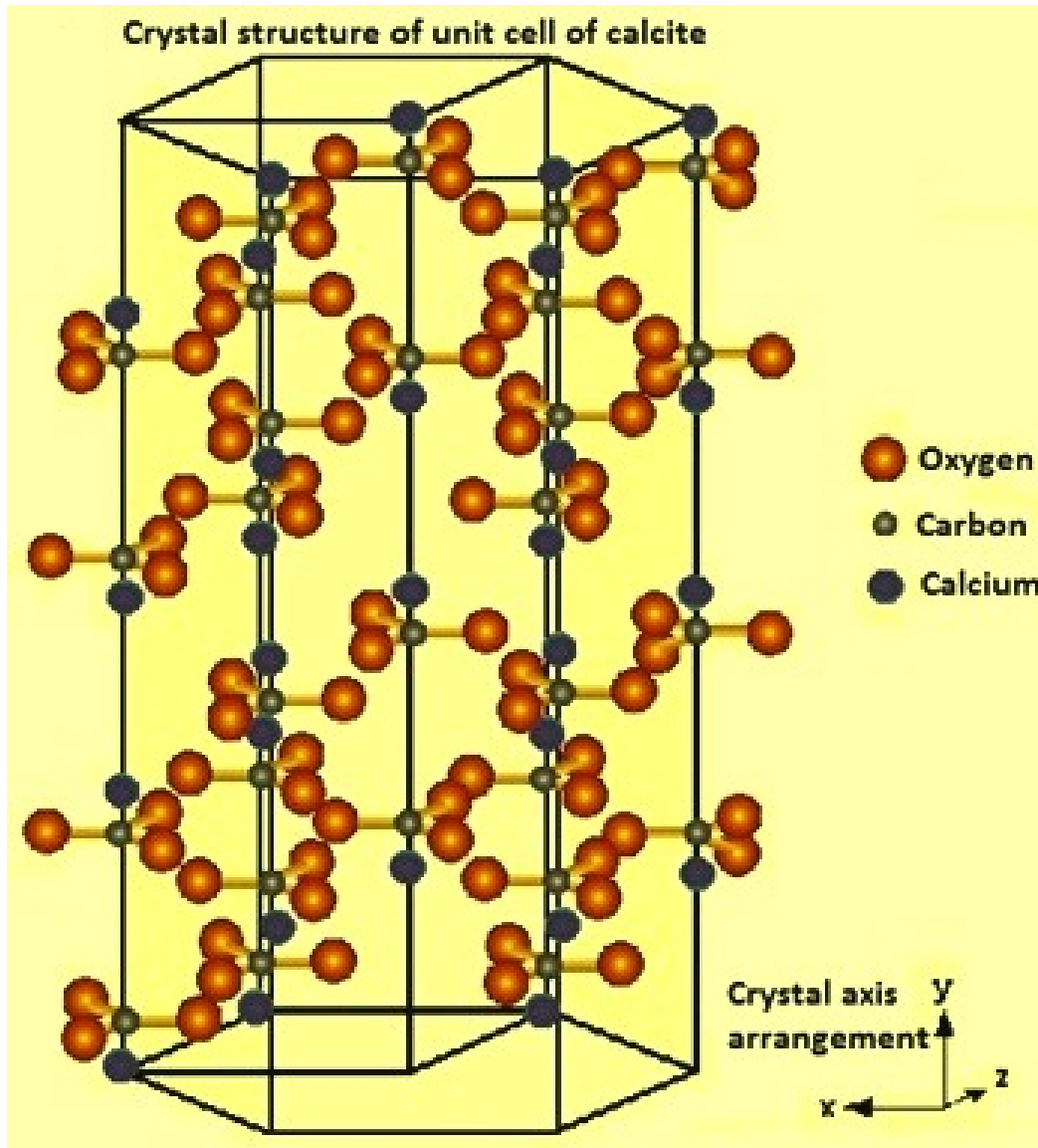
# Uniaxial and Biaxial Crystals

**Uniaxial** : Calcite, Quartz

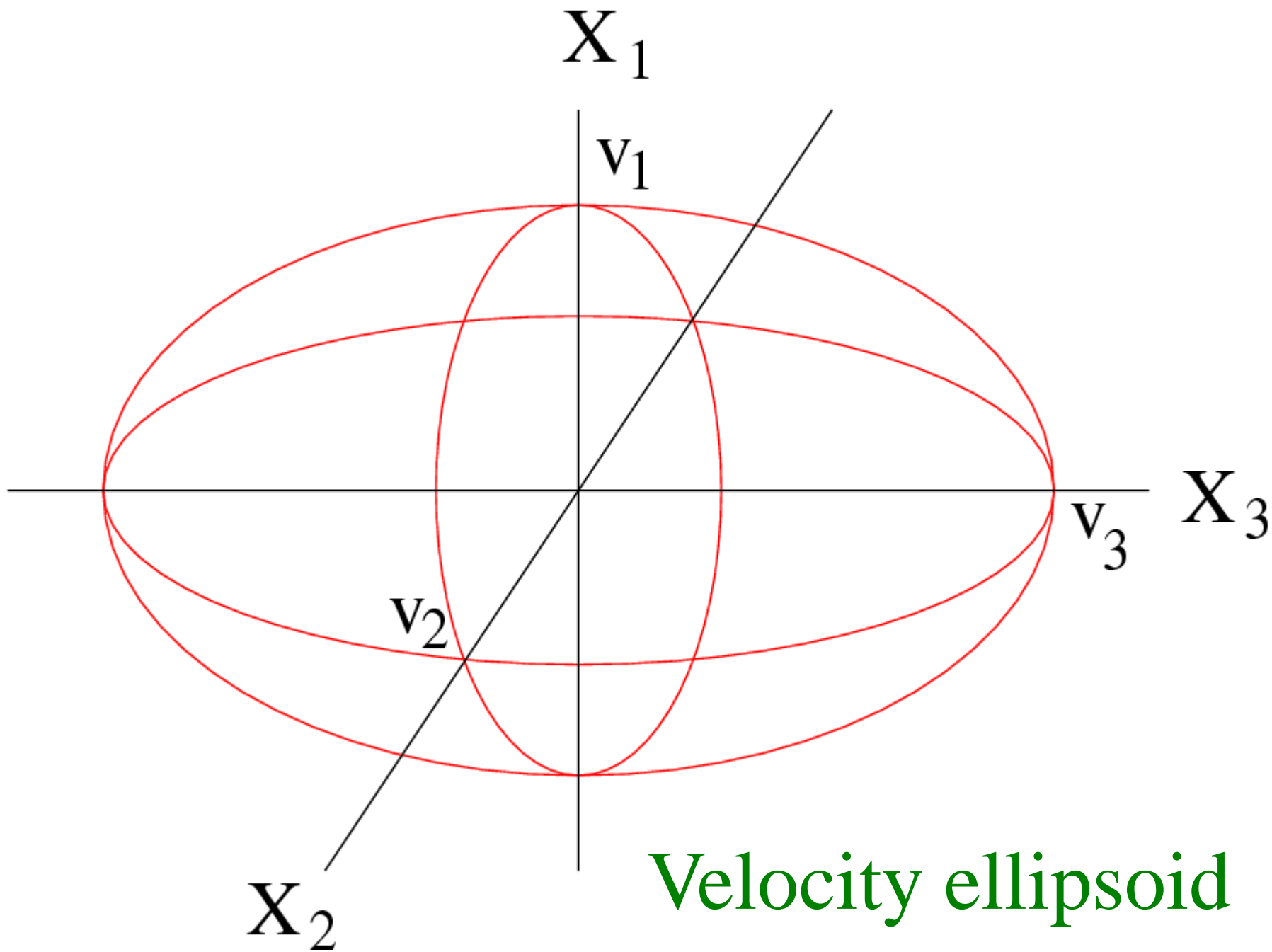
**Biaxial**: Mica

Velocity ellipsoid

# Calcite: $\text{CaCO}_3$



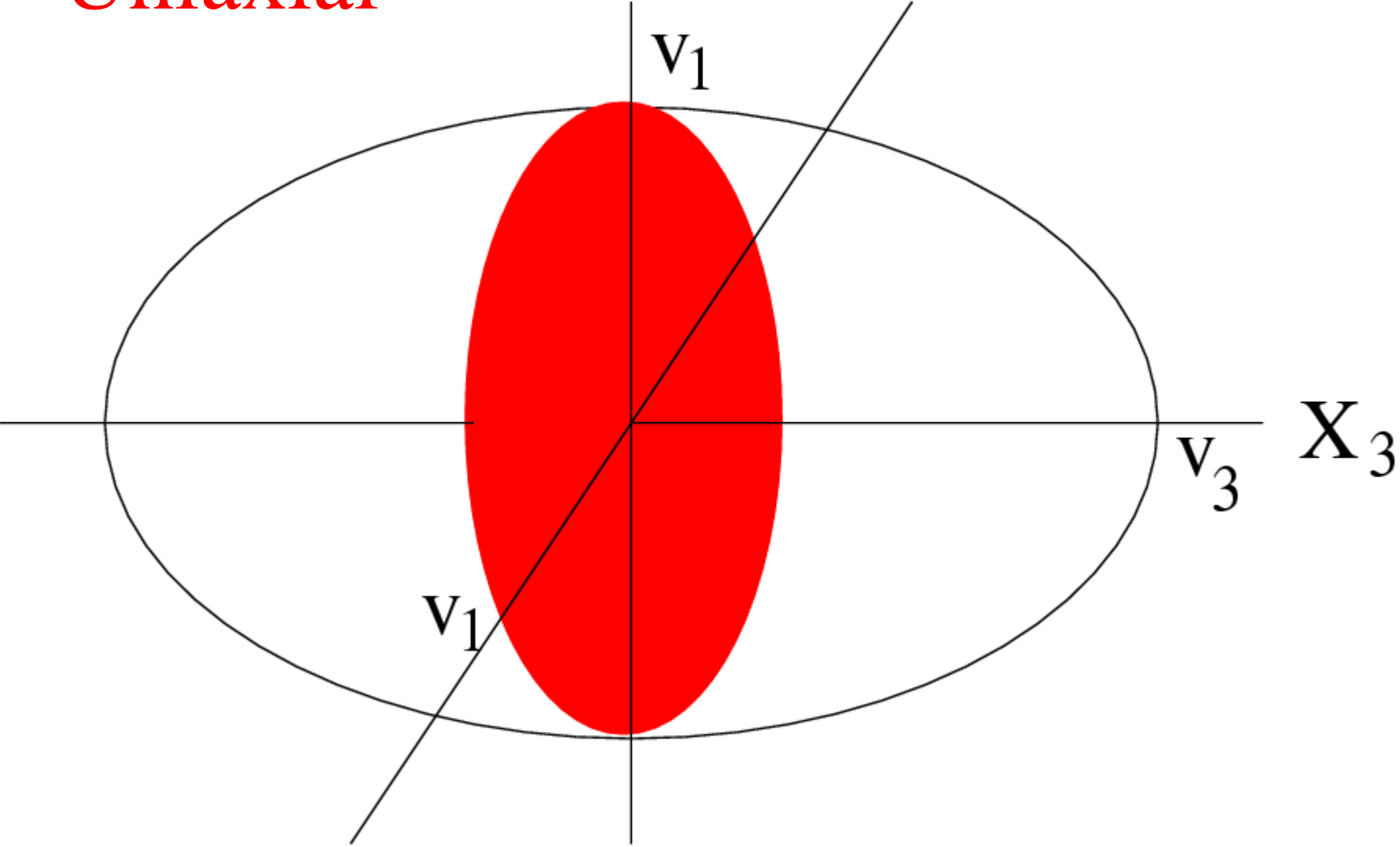
<http://ispatguru.com/limestone-and-lime/>



# Uniaxial

$X_1$

$v_1$



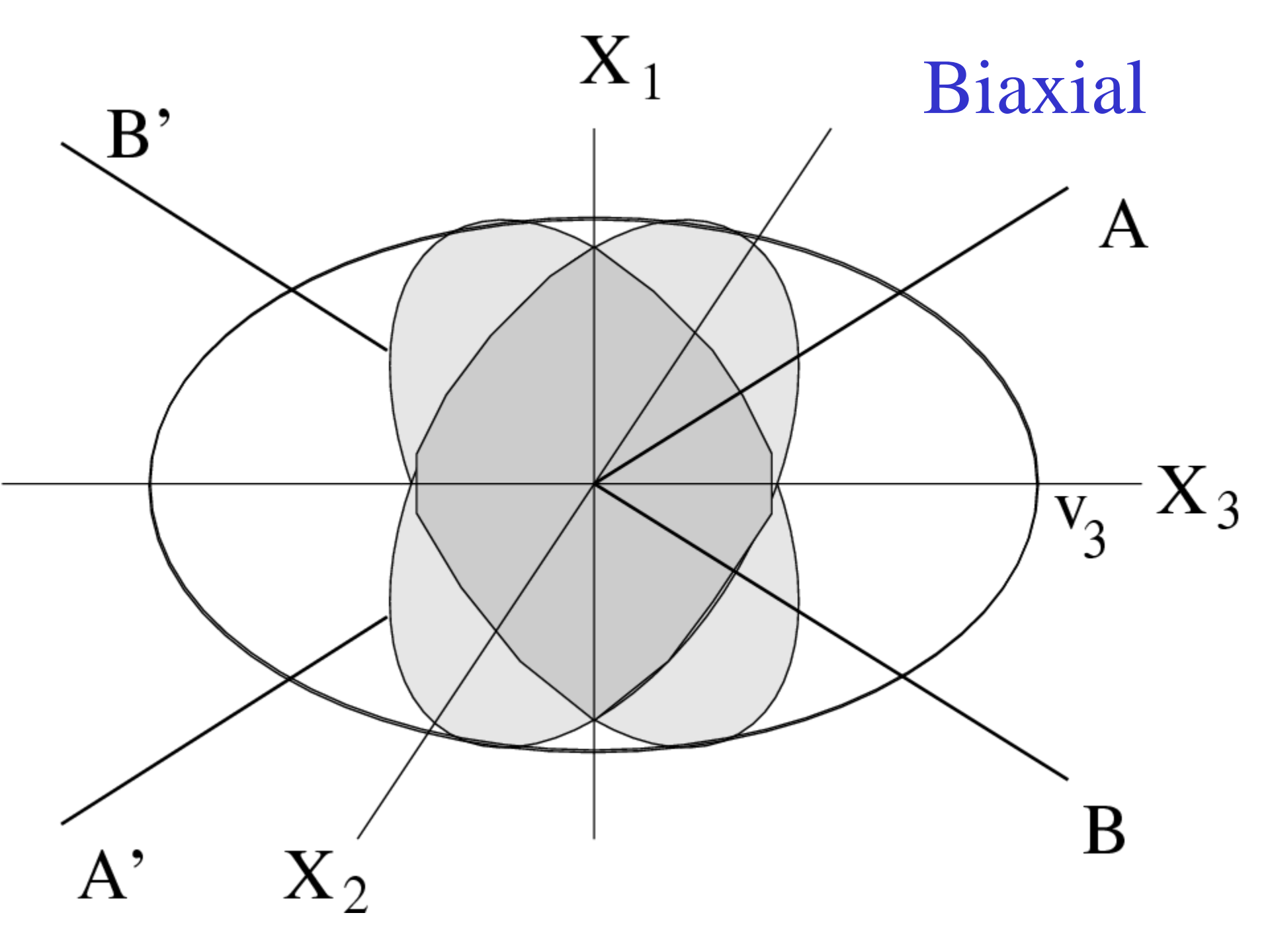
$v_1$

$v_3$

$X_3$

$X_2$

$v_2 = v_1$



# Positive and Negative uniaxial crystals

Quartz - Positive

$$n_o = 1.5443$$

$$n_e = 1.5534$$

For sodium D lines

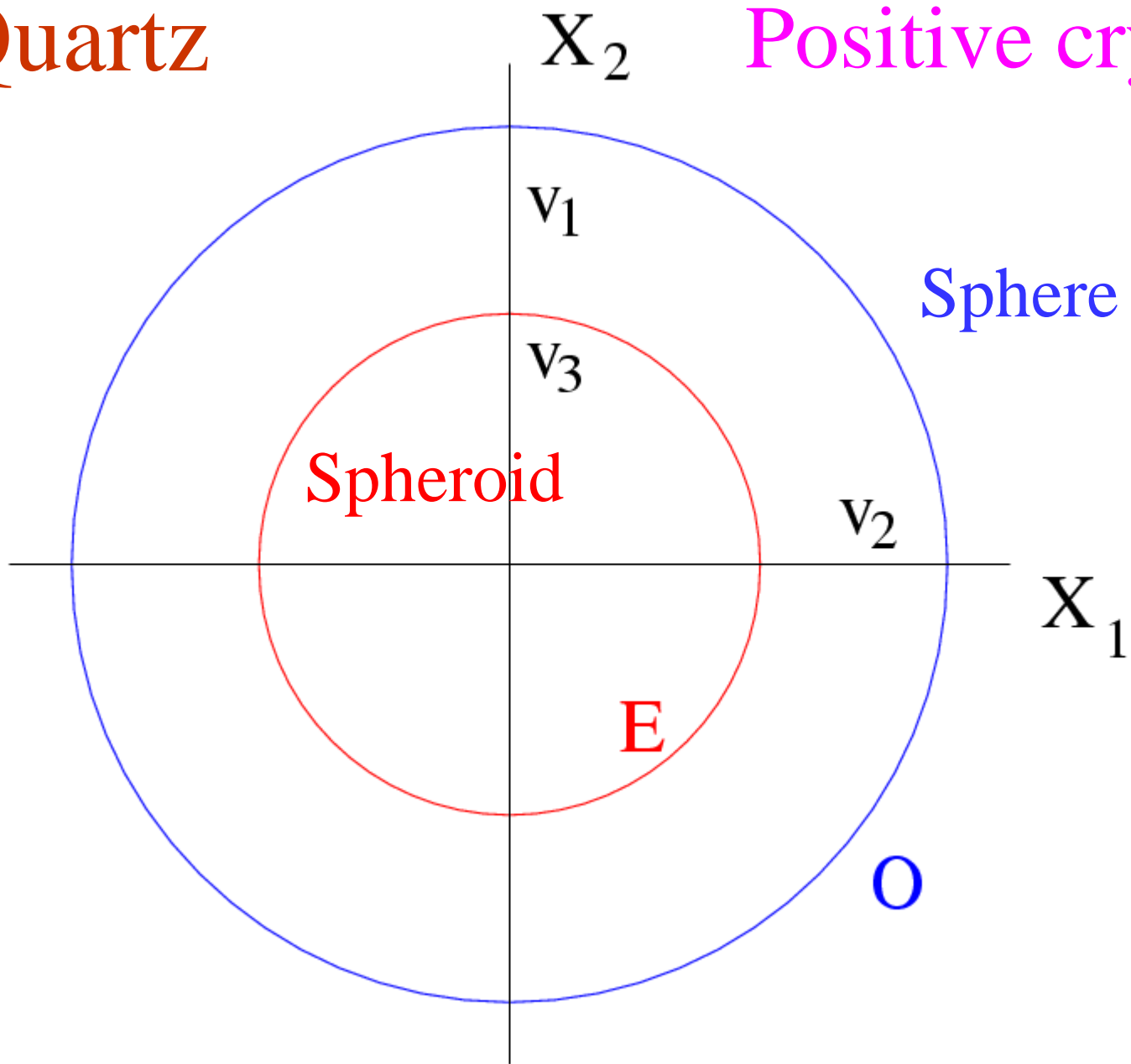
Calcite - Negative

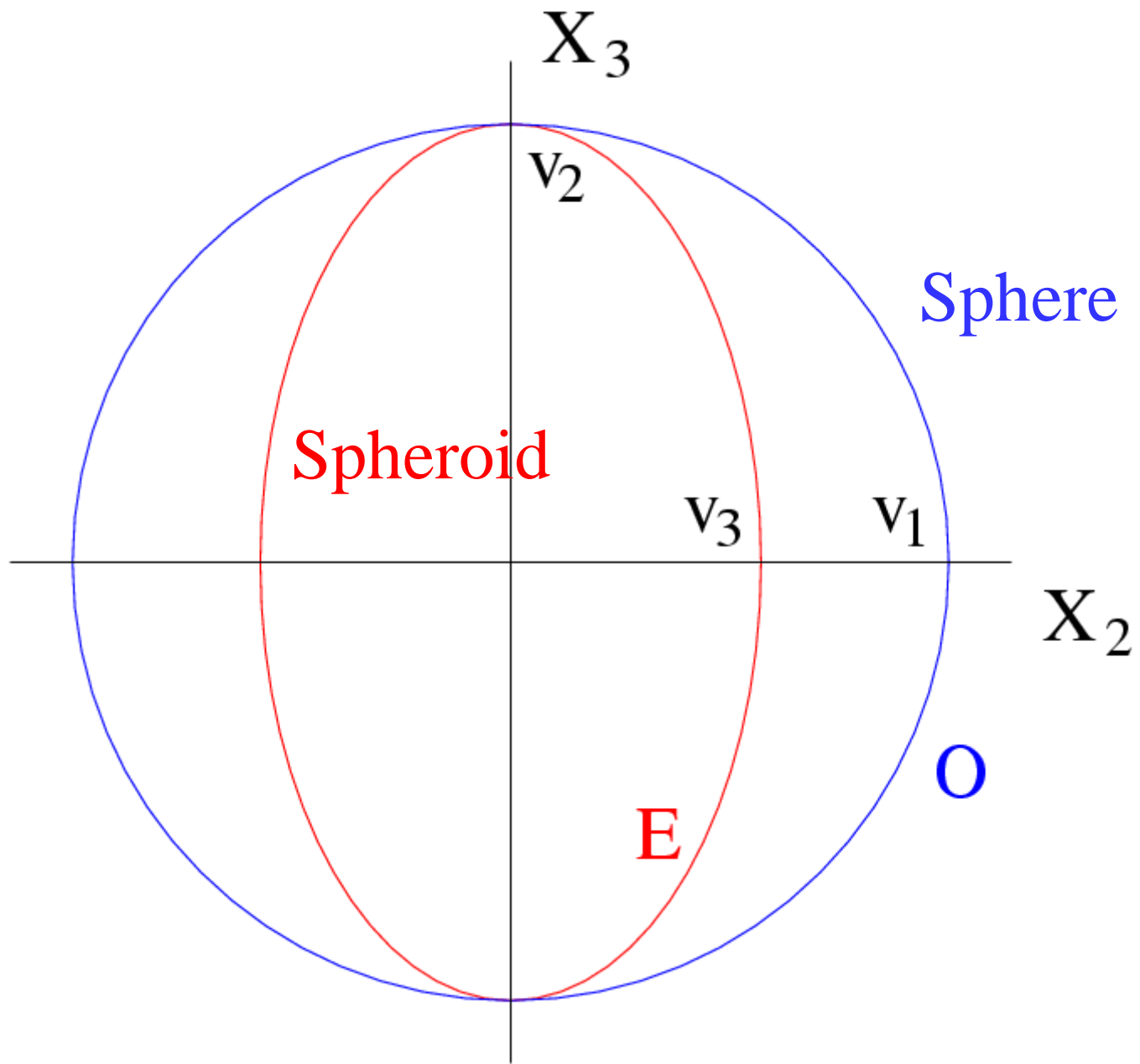
$$n_o = 1.6584$$

$$n_e = 1.4864$$

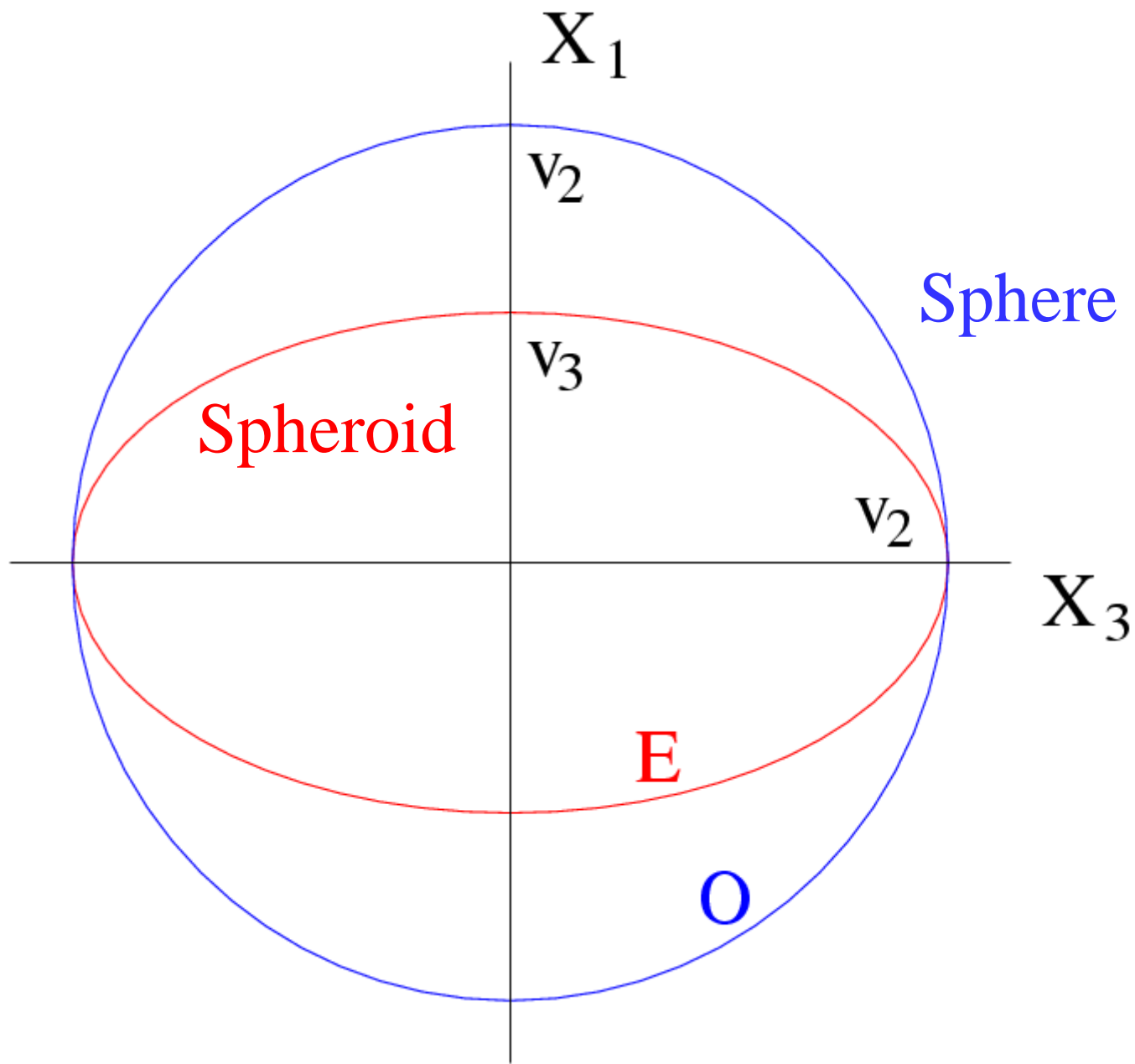
Quartz

Positive crystal





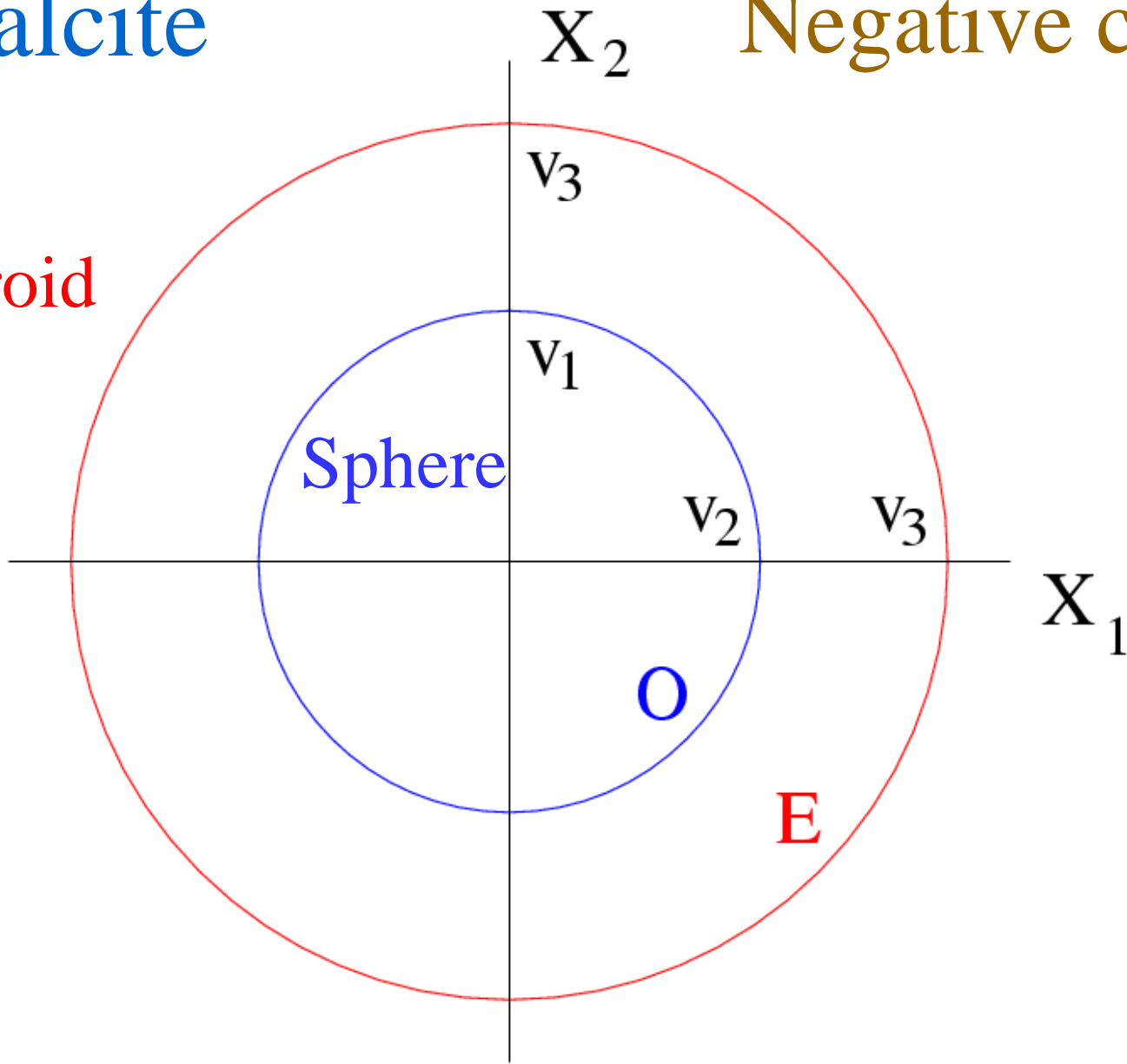


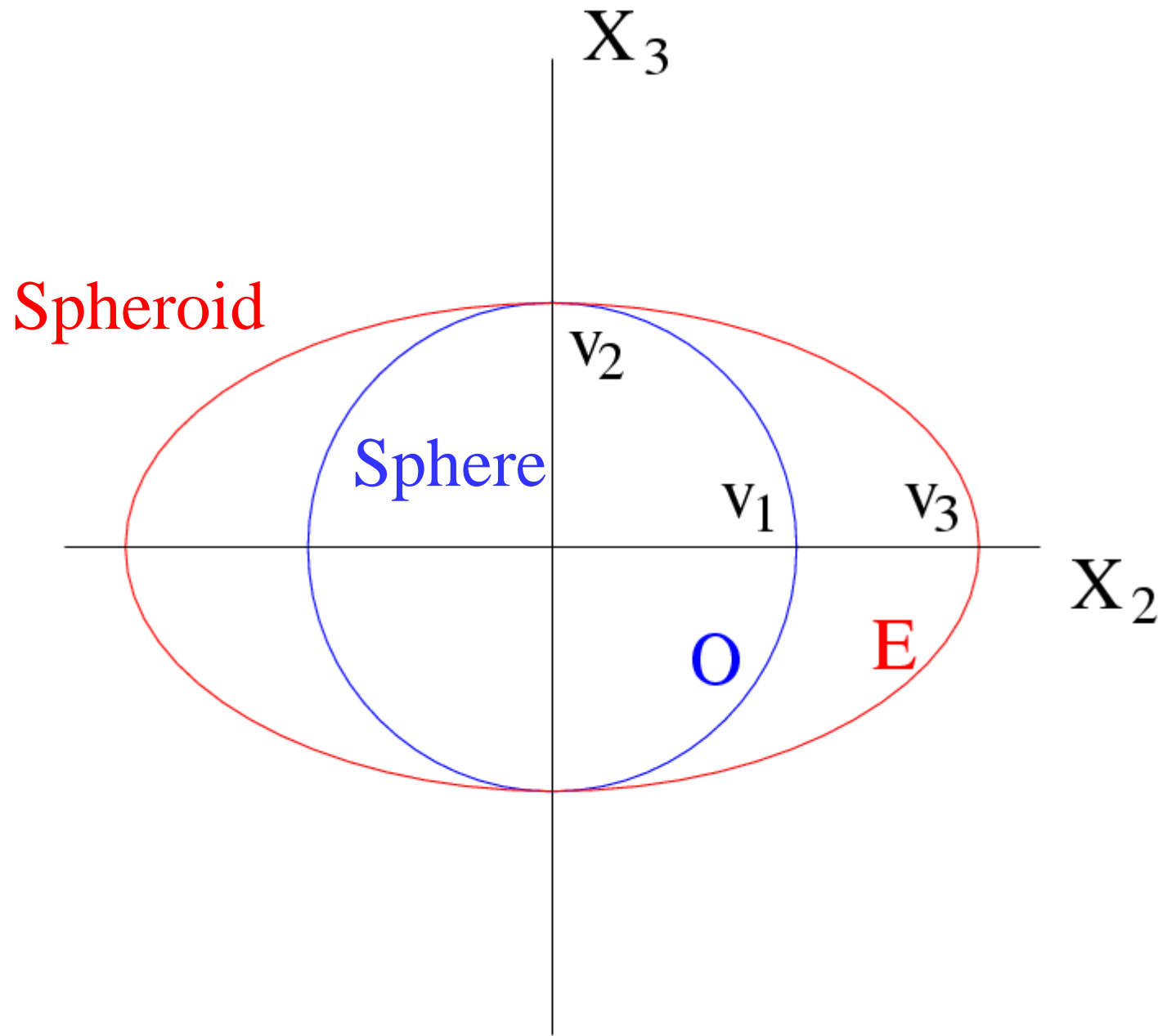


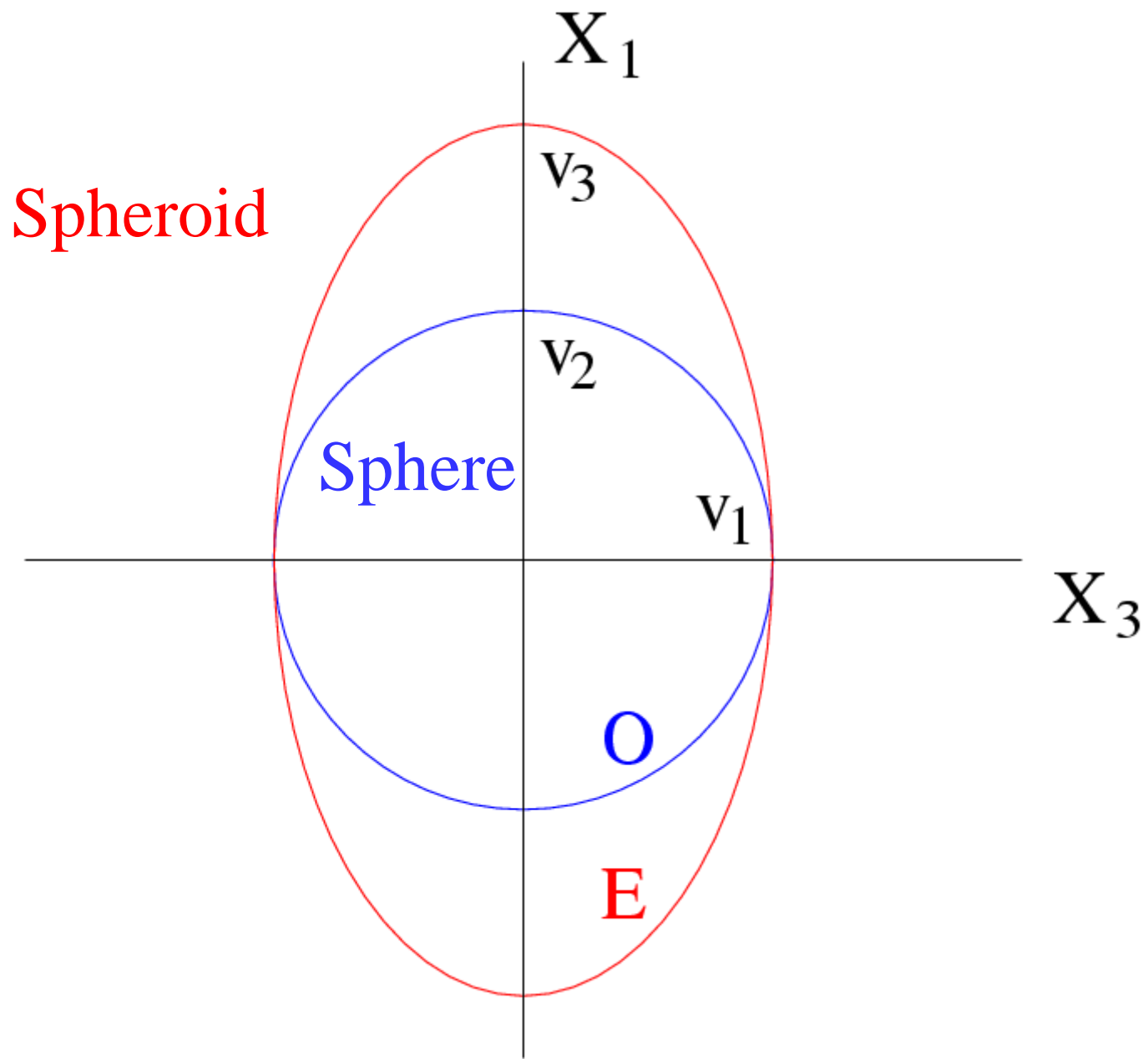
Calcite

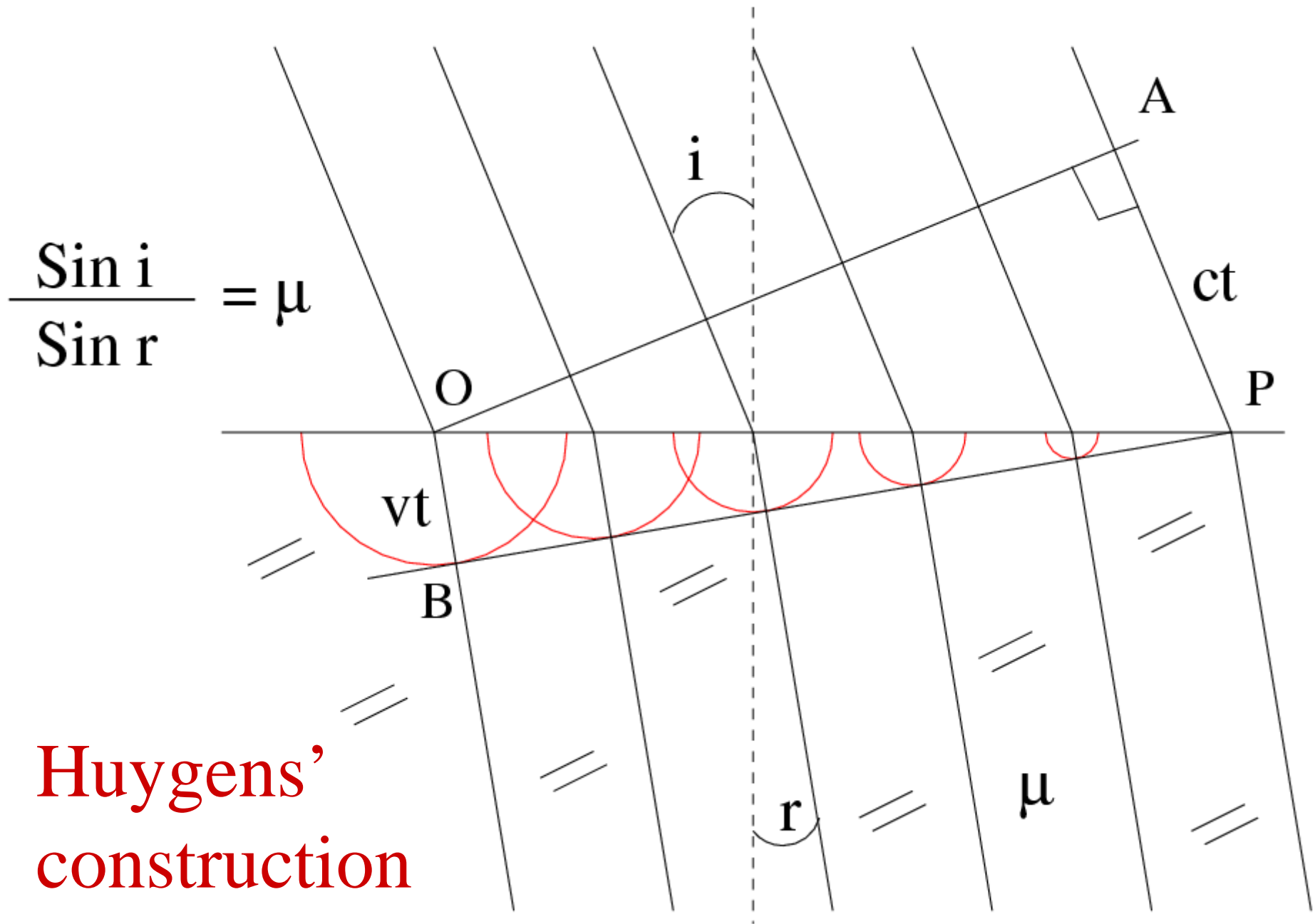
Negative crystal

Spheroid

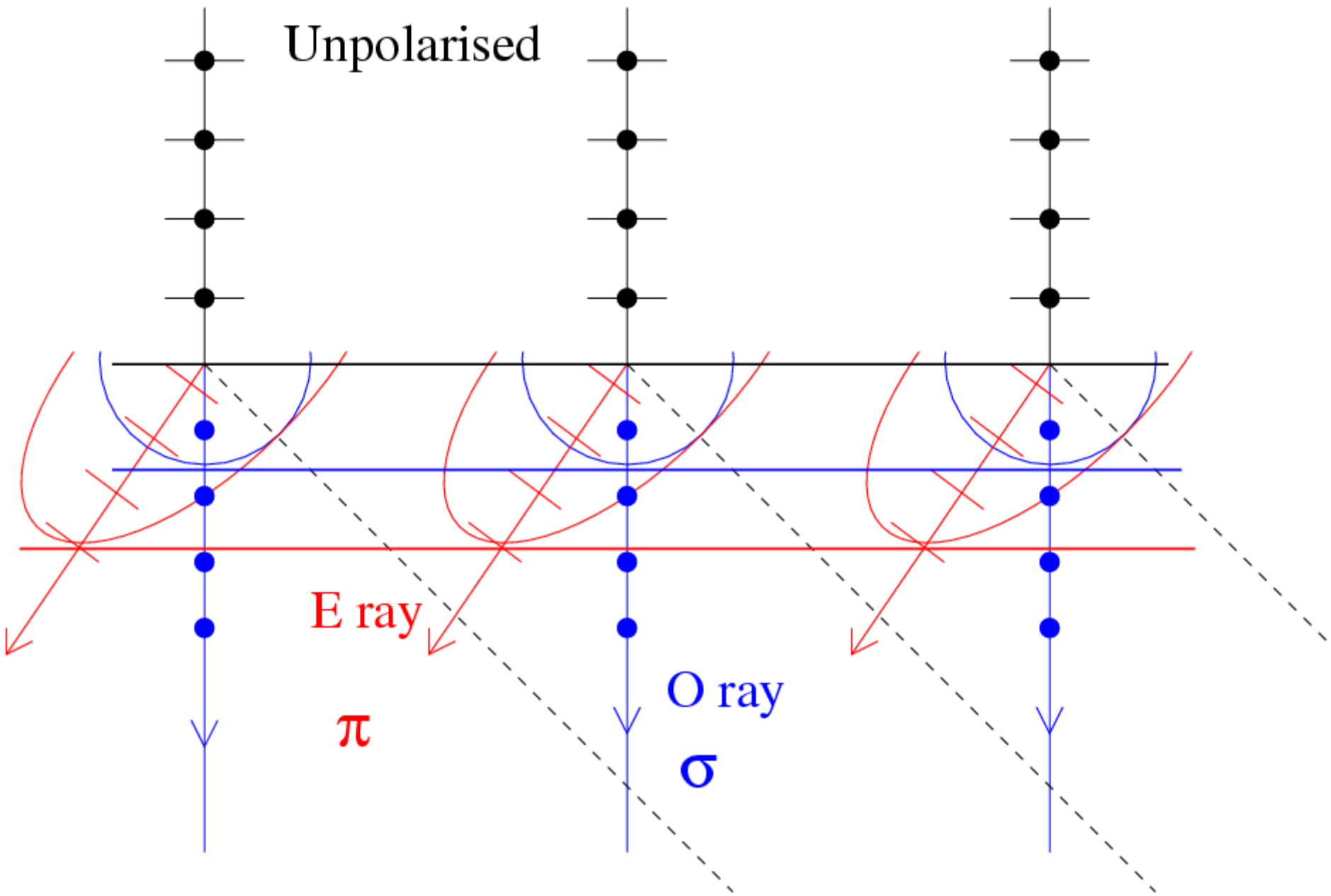


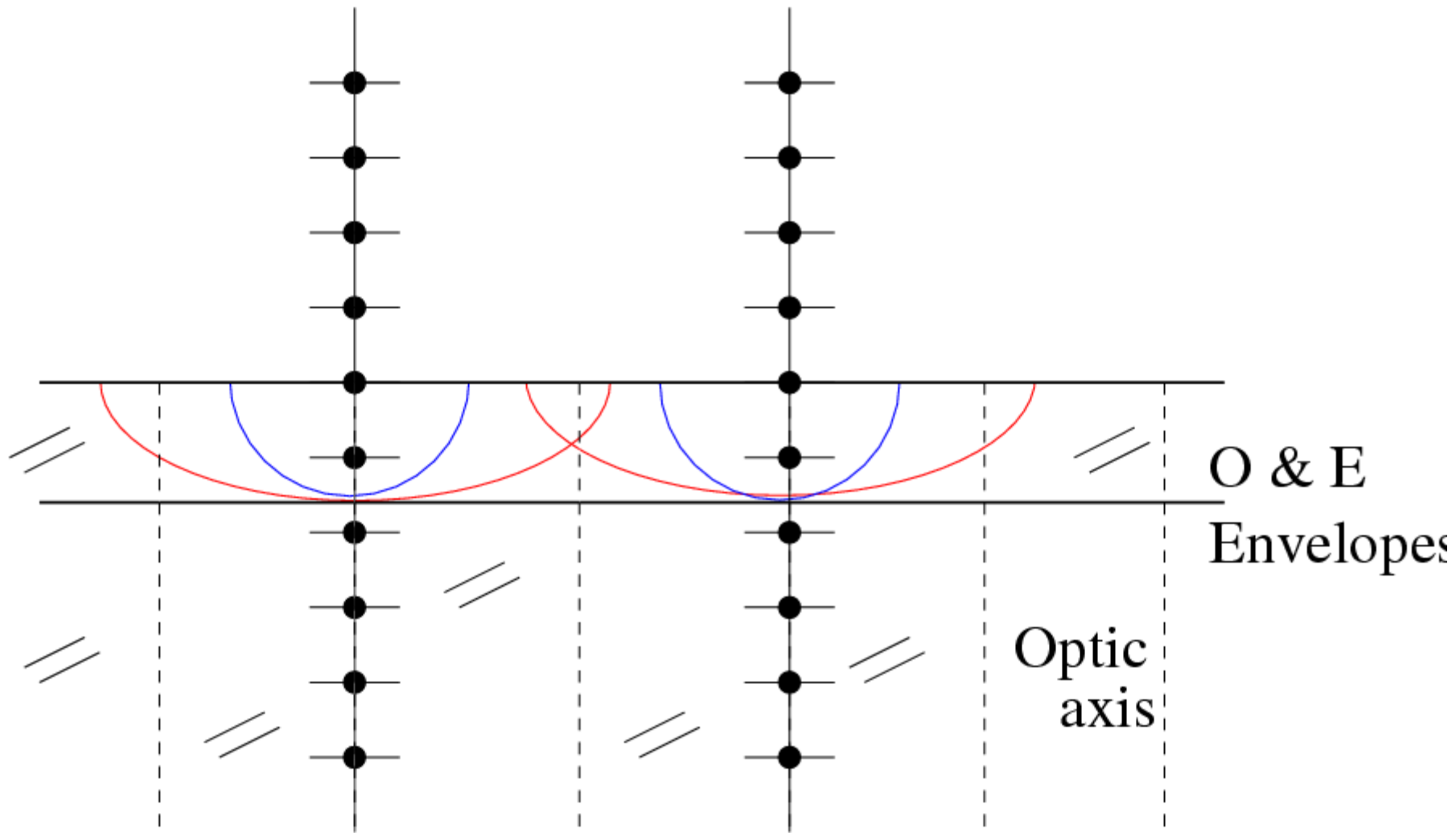


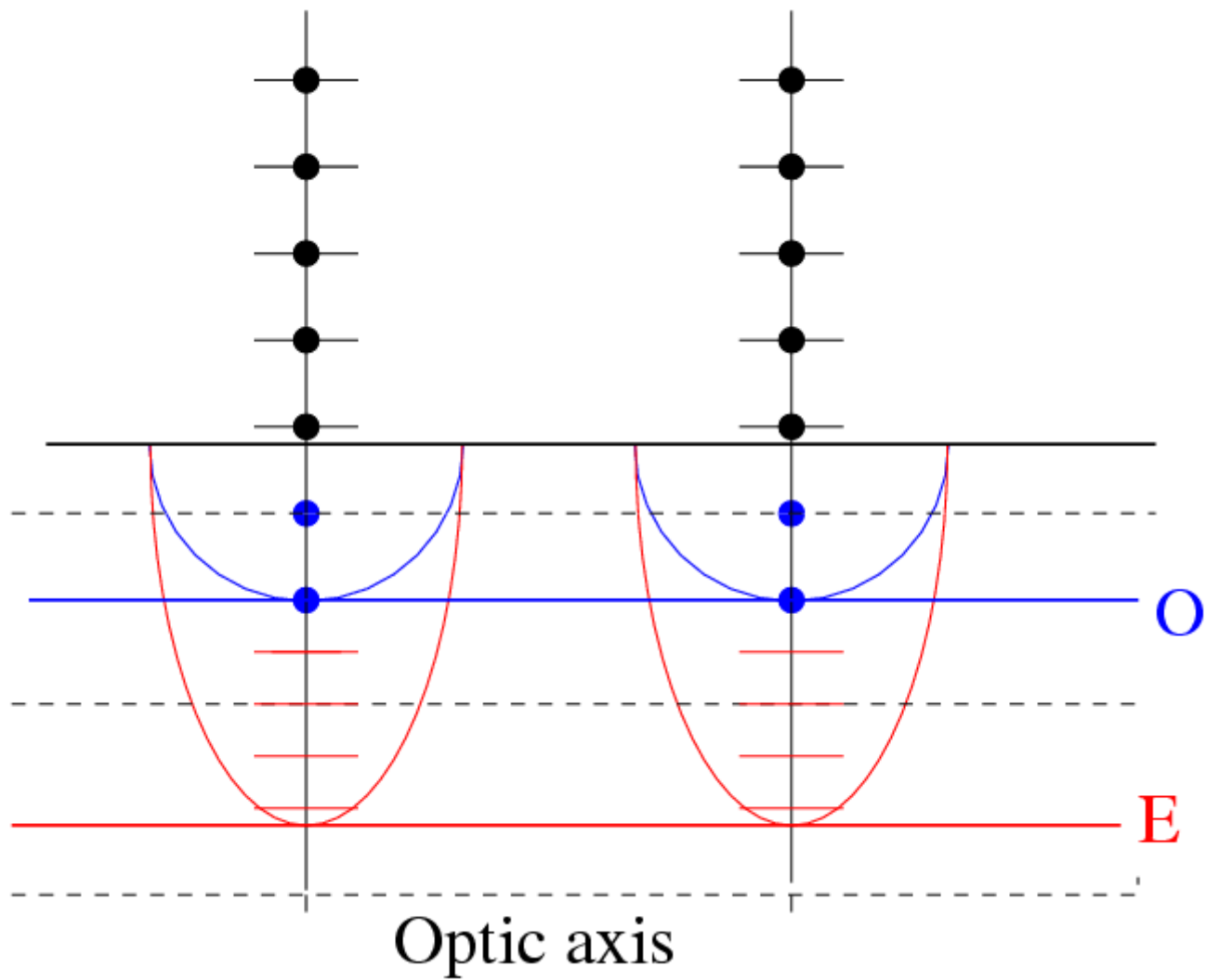




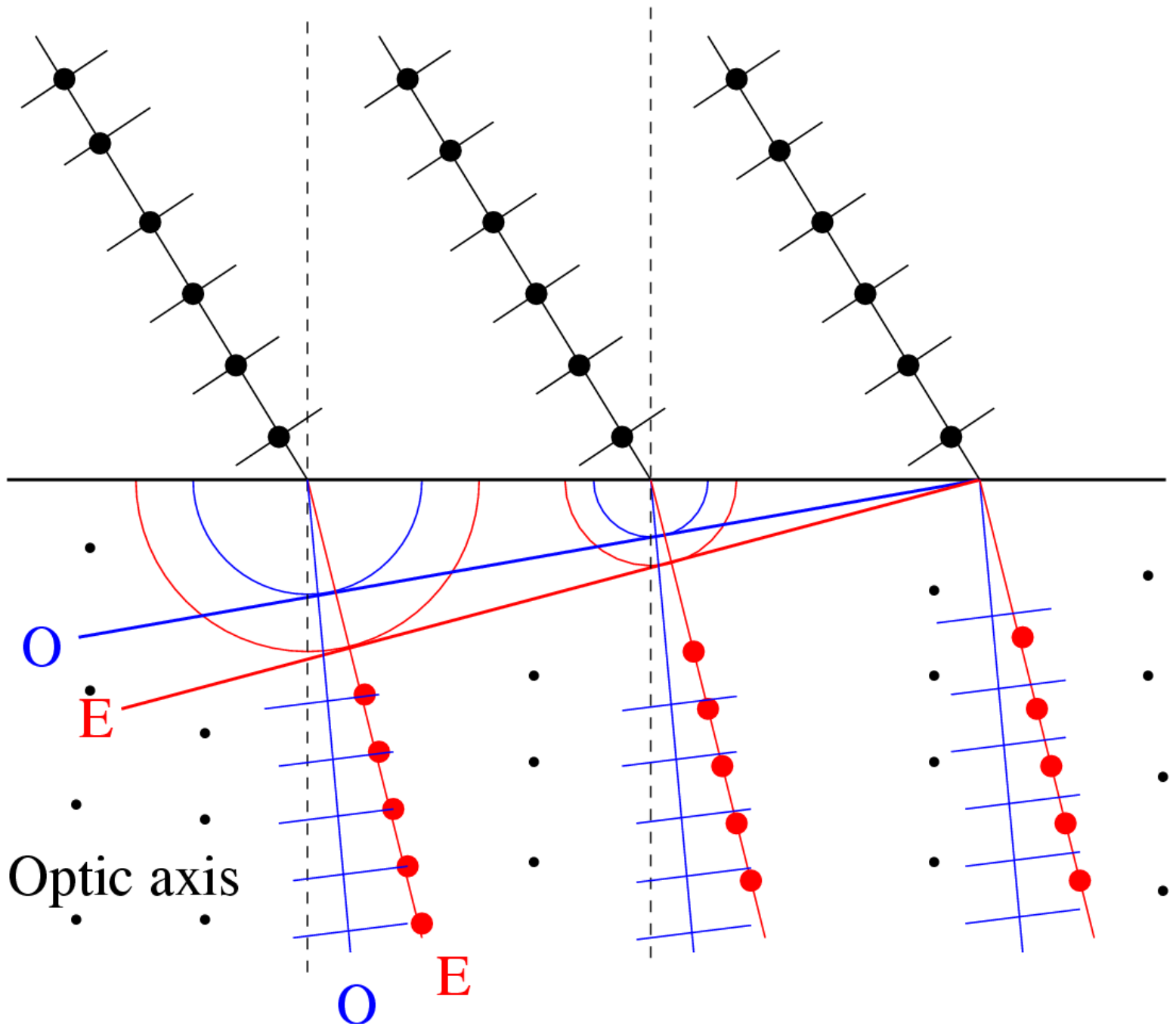
Unpolarised





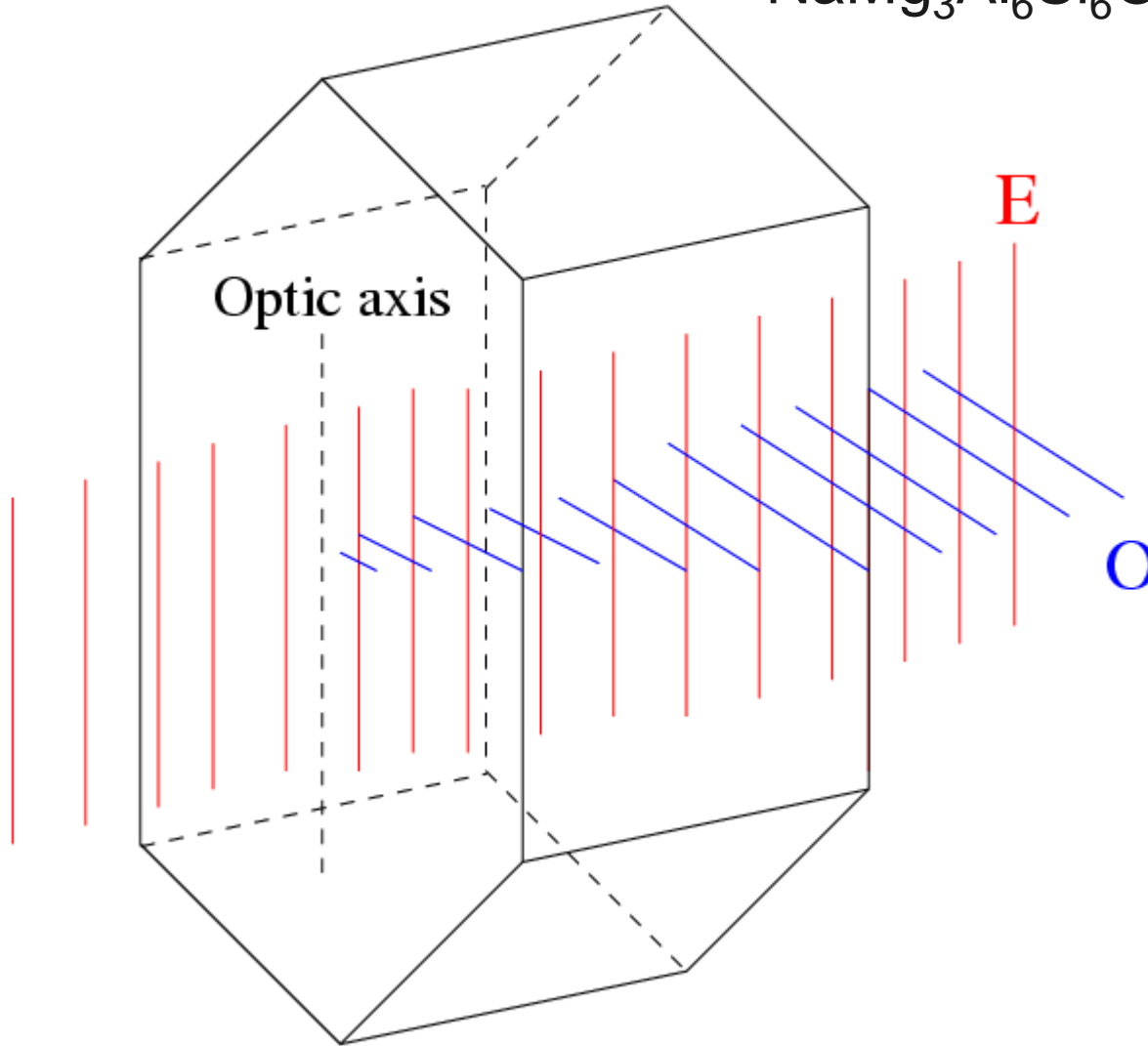
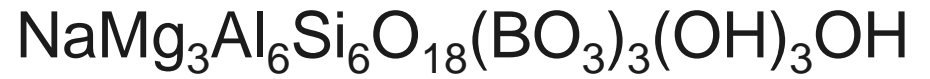






# Dichroic crystals

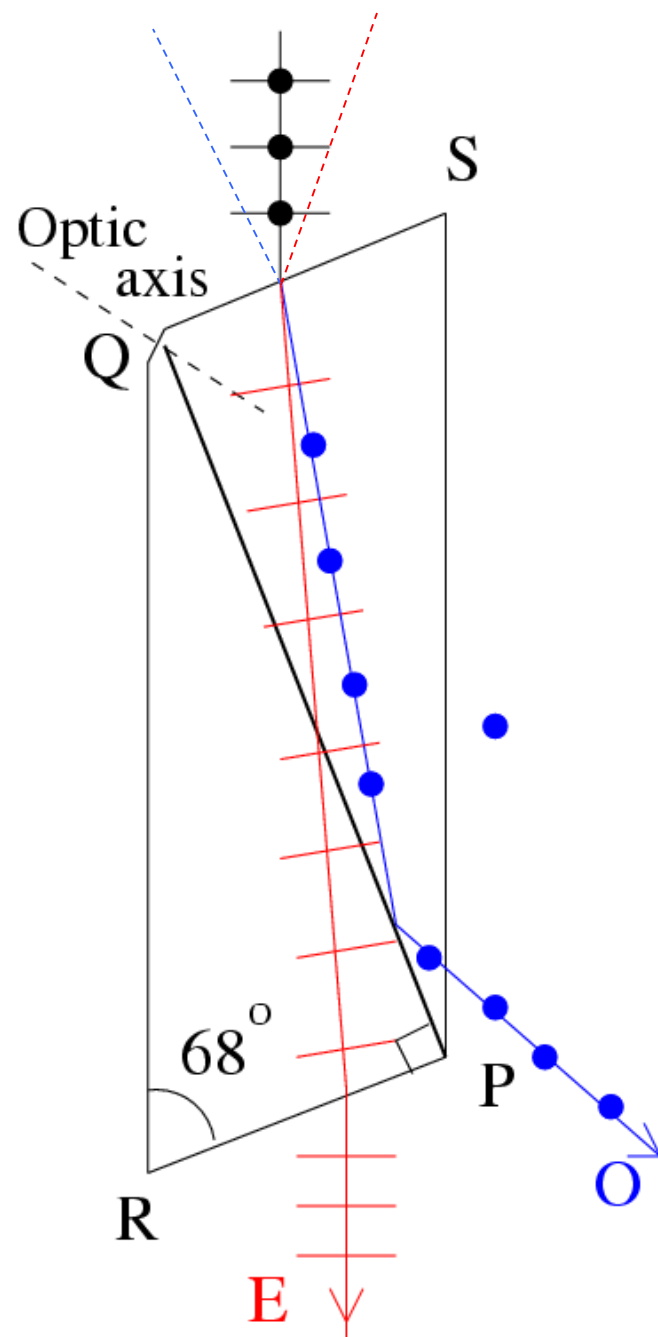
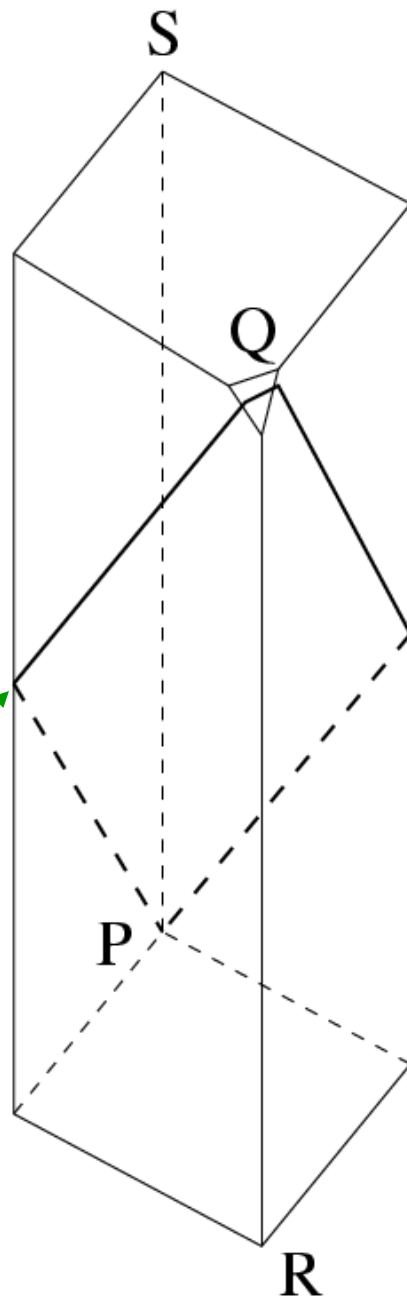
Tourmaline



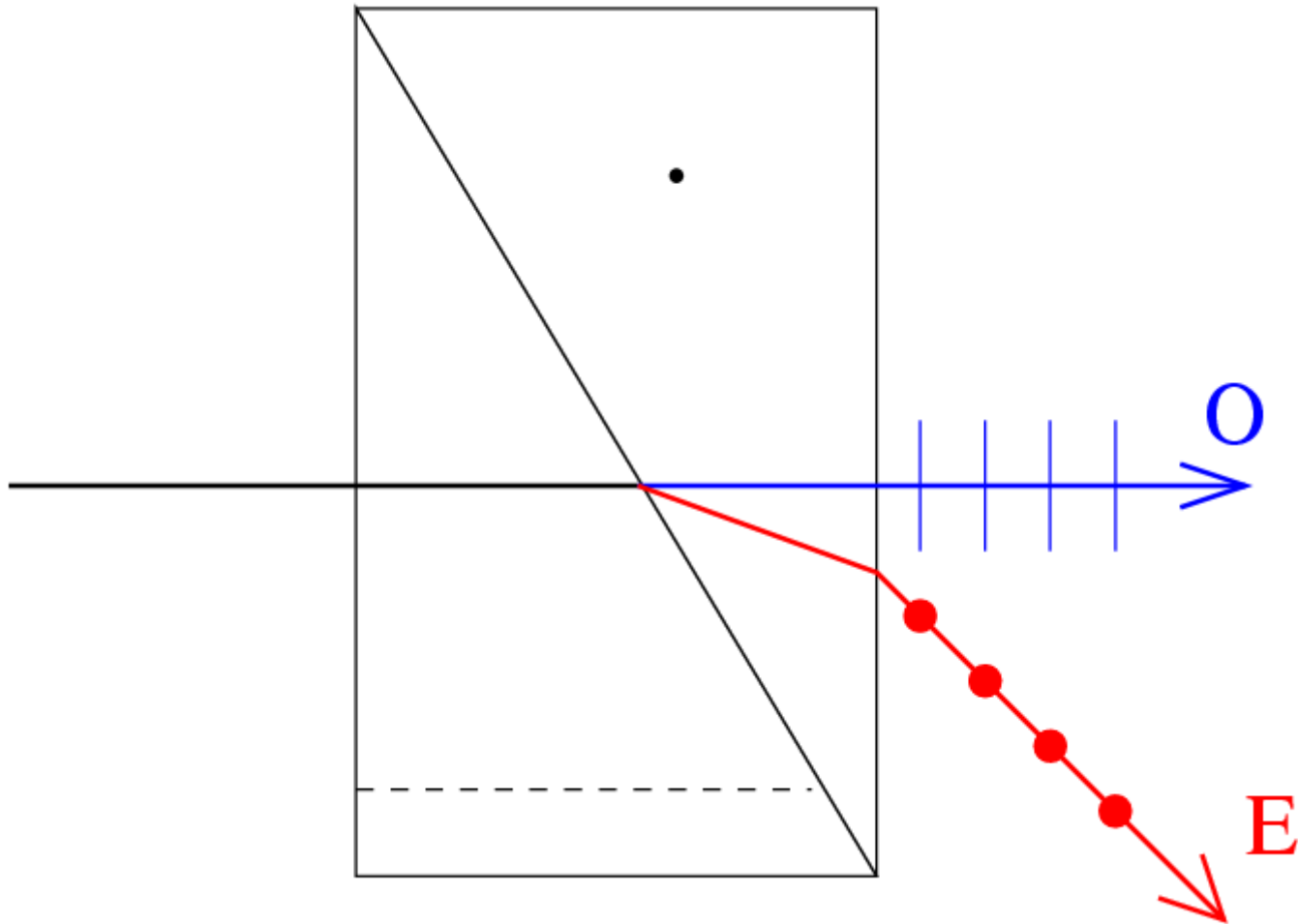
Nicol  
prism

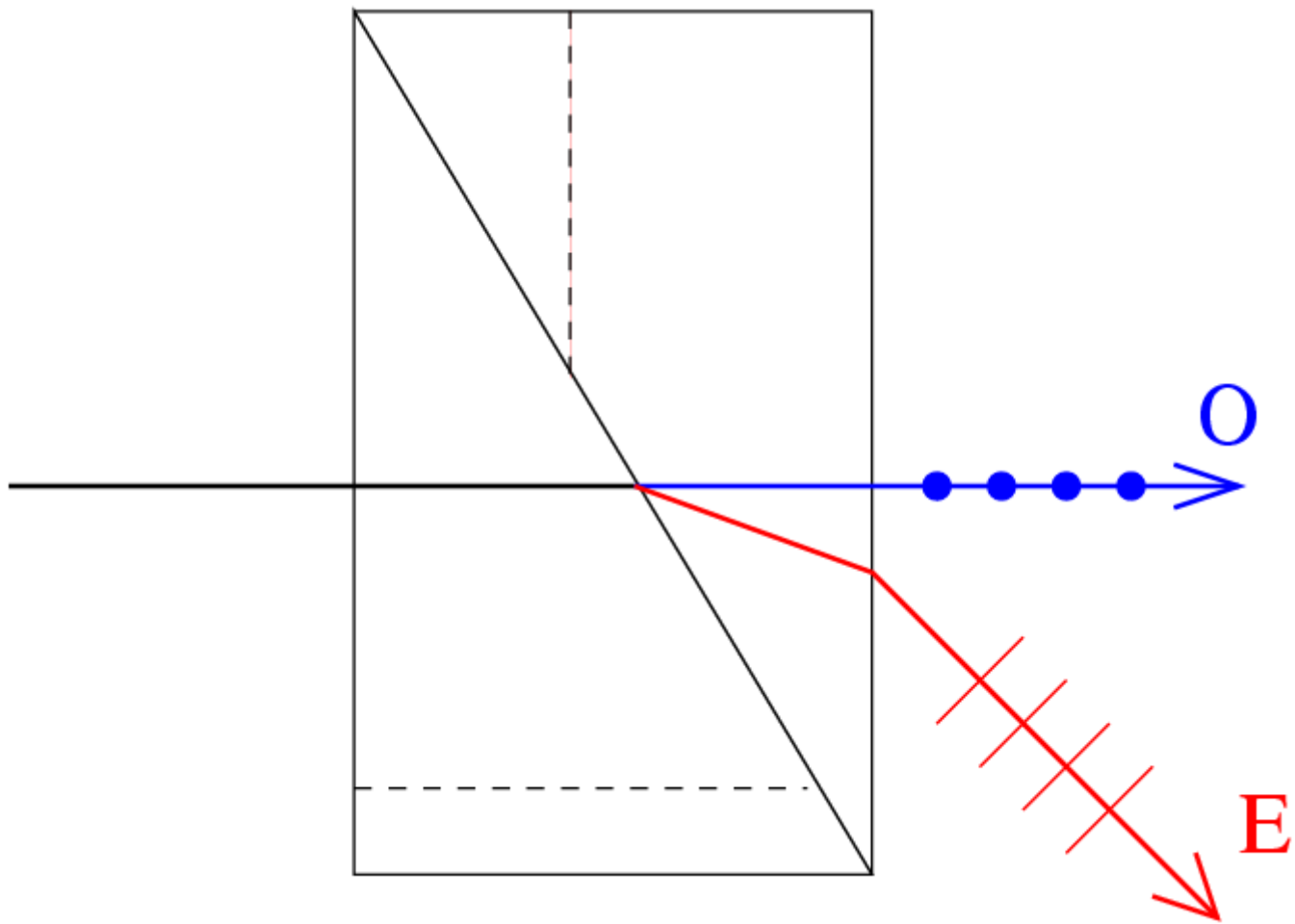
Calcite

Canada  
balsam  
 $n = 1.55$



# Rochon prism





# Wollaston prism

