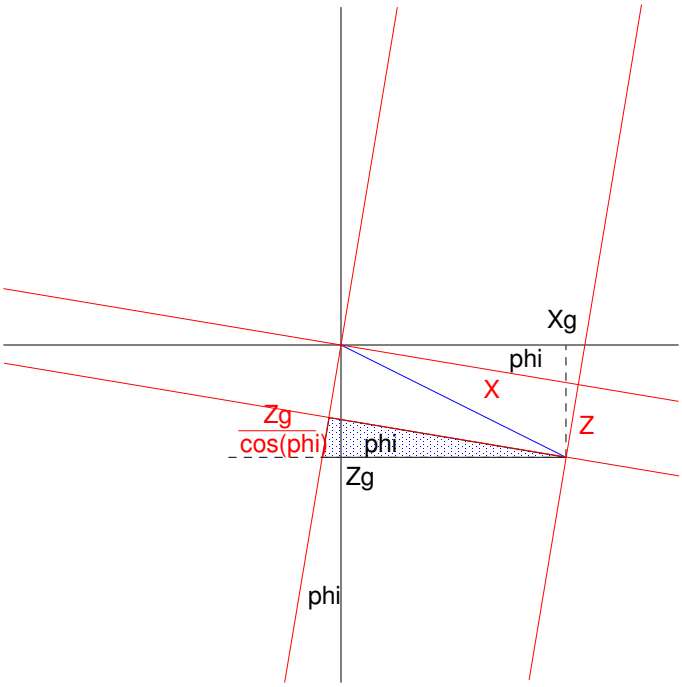

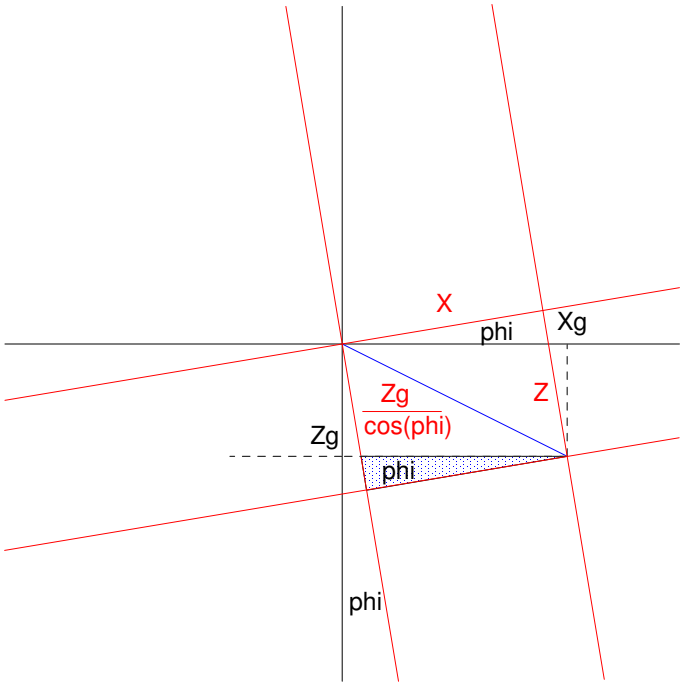

$$\tan(-\text{phi}) = \frac{\frac{Zg}{\cos(\text{phi})} - Z}{X}$$

$$\tan(\text{phi}) = \frac{Z - \frac{Zg}{\cos(\text{phi})}}{X}$$

$$\tan(\text{phi}) = \frac{Z*\cos(\text{phi}) - Zg}{X*\cos(\text{phi})}$$

for small phi and X <> 0 $\tan(\text{phi}) = \frac{Z - Zg}{X}$

$$\frac{\sin(\text{phi})}{\cos(\text{phi})} = \frac{Z*\cos(\text{phi}) - Zg}{X*\cos(\text{phi})}$$

The XZ plane we look at is actually
the plane that holds the resulting XY vector
Therefore replace X by SQRT(X*X + Y*Y)

$$X*\sin(\text{phi}) = Z*\cos(\text{phi}) - Zg$$

All values are vector length values (>=0)