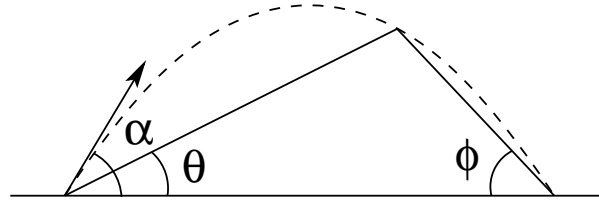


[mex140] **Lowest shot to target across hill**

Consider a hill consisting of two straight slopes with inclinations θ and ϕ . A projectile is fired along a parabolic trajectory from the foot of the hill on one side to the foot of the hill on the opposite side in such a way that it grazes the summit. Show that the angle of projection must be

$$\alpha = \arctan(\tan \theta + \tan \phi).$$



Solution: