Now, the angle ϕ is equal to the angle between the normal to the (111) plane (which is the [111] direction), and the [120] direction. Again from Equation 7.6, and for $u_1 = 1$, $v_1 = 1$, $w_1 = 1$, $u_2 = 1$, $v_2 = 2$, and $w_2 = 0$, we have

$$\phi = \cos^{-1}\left[\frac{(1)(1) + (1)(2) + (1)(0)}{\sqrt{\left[(1)^2 + (1)^2 + (1)^2\right]\left[(1)^2 + (2)^2 + (0)^2\right]}}\right]$$

$$= \cos^{-1}\left(\frac{3}{\sqrt{15}}\right) = 39.2°$$

Therefore, the Schmid factor is equal to

$$\cos\lambda \cos\phi = \cos(50.8°)\cos(39.2°) = \left(\frac{2}{\sqrt{10}}\right)\left(\frac{3}{\sqrt{15}}\right) = 0.490$$