C5MICHSTS

Michelson's Stellar Interferometer
Diffraction angle Y/X, wavelength λ, angle to be determined is Φ.
Interferometer distance of Mirror M1 and M4 is h.

In the real set-up we change h to go from fringe pattern to no fringe pattern. From the difference of these two values we calculate the angle Φ.

In this simulation we choose an angle Φ and show that the fringe pattern changes for the two values of h we determine.
Example h equal 100 and 95.

$Y := -30, -29.9 .. 30 \qquad \Phi \equiv .00005 \qquad X := 4000 \qquad \lambda := .0005 \qquad d \equiv .5$

$$uI(Y) := \cos\left[\pi \cdot d \cdot \left(\frac{Y}{X \cdot \lambda}\right)\right]^2$$

$$uII(Y) := \cos\left(\pi \cdot \frac{\frac{Y}{X} \cdot d - h \cdot \Phi}{\lambda}\right)^2$$

$h \equiv 95$

This is an indication if there are fringes or not