R = sqrt(A\_{1}^2 + A\_{2}^2 + 2A\_{1}A\_{2}cosphi)

R = 2Acosphi/2

I = I\_{1} + I\_{2} + 2 sqrt(I\_{1}I\_{2})cosphi

I = 4I\_{0}cos^2phi/2

Constructive interference

phi = 2npi

R = A\_{1} + A\_{2}

I = ((sqrt(I\_{1}) + sqrt(I\_{2}))^2)

delta = nlambda

phi = (2pi)/lambda delta

destructive interference

phi = (2n +1)pi

R = A\_{1} – A\_{2}

I = ((sqrt(I\_{1}) - sqrt(I\_{2}))^2)

delta = (2n – 1)lambda/2

YDSE

Bright fringe: 4I\_{0} dark fringe: I = 0

delta = (dx)/D

x = distance from center d = distance between slits D = distance between screen and slit

phi = (2pi)/lambda \* (dx)/D

distance of nth fringe from C(center of screen)

(dx)/D = nlambda

Bright: x = (nlambdaD)/d dark: x = ((2n-1)lambdaD)/(2d)

Fringe width

Beta = (lambdaD)/d = lambda\_{nB} – lambda\_{(n-1)B}

Tilted source

(dx)/D = dsintheta

In medium

Lambda rightarrow lambda/mu

v =c/mu

beta’ = beta/mu

shift

&imag&

C

t μ

t(mu – 1) = (dx)/D

x = (Dt(mu – 1 ))/d

t is the thickness of medium placed infront of one slit

if two medium of same thickness, but different `mu` values each placed infront of either of the wwaves

&image&

t μ1

C

t μ2

t(mu\_{1} – mu\_{2}) = (dx)/D