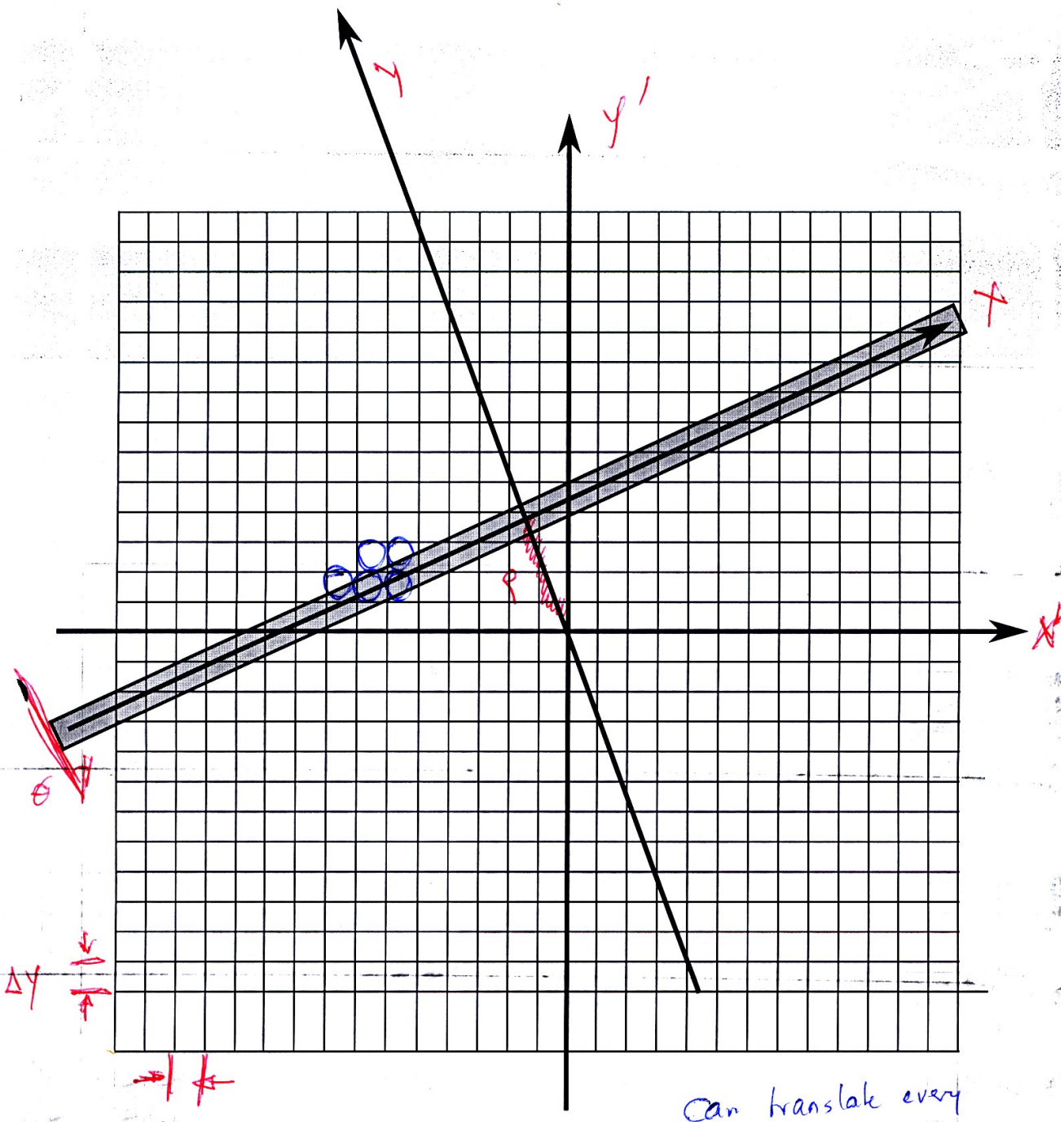


origin

$X'_0 = X_0 + \rho \sin\theta$

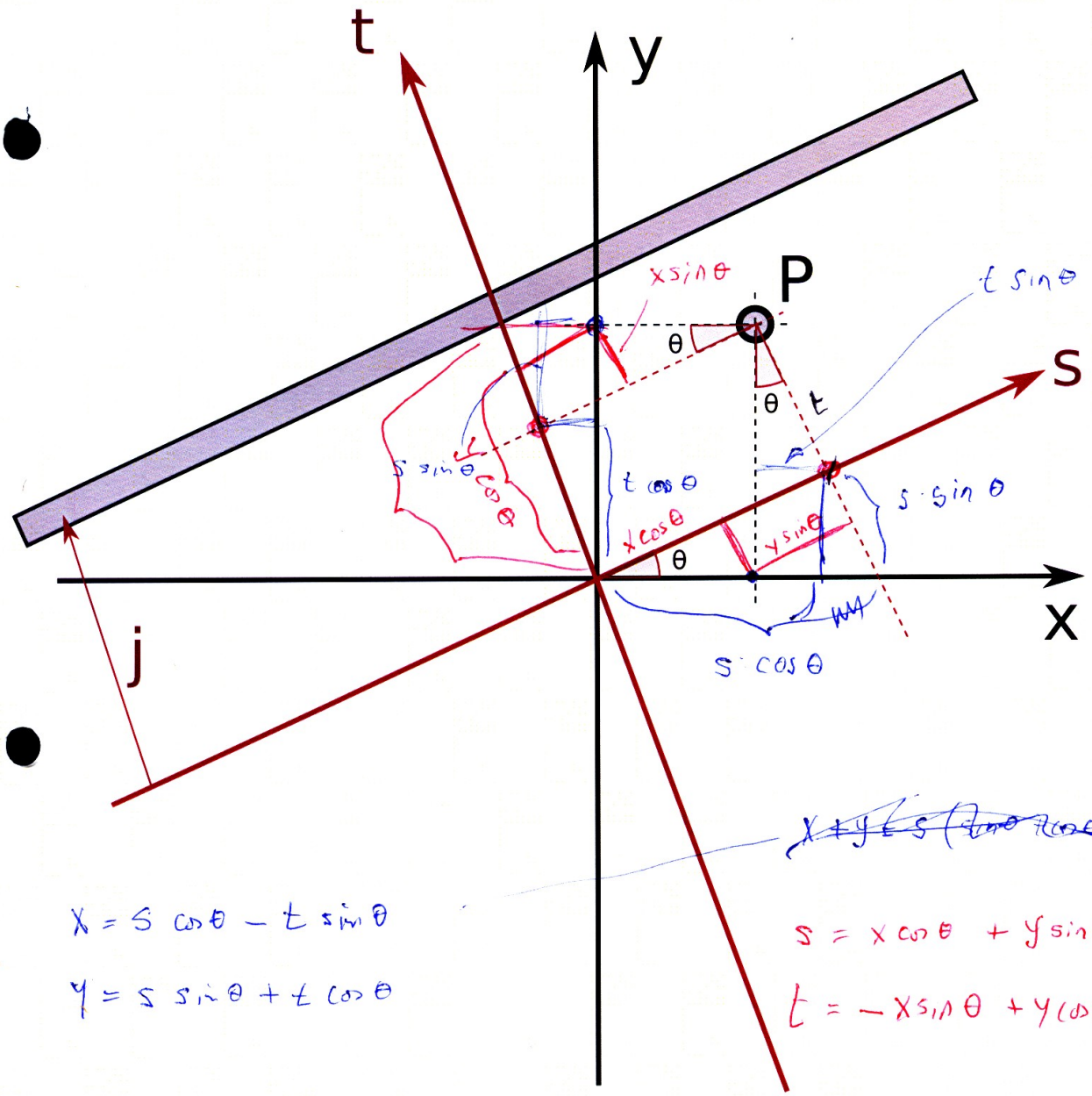
$Y'_0 = Y_0 - \rho \cos\theta$

Can translate every pixel into x-y Coordinate system

Circular approximation ?

$r = \frac{\Delta x}{z}$

Beam Centers on X axis



$x + y = s(\cos\theta + \sin\theta)$

$x = s\cos\theta - t\sin\theta$

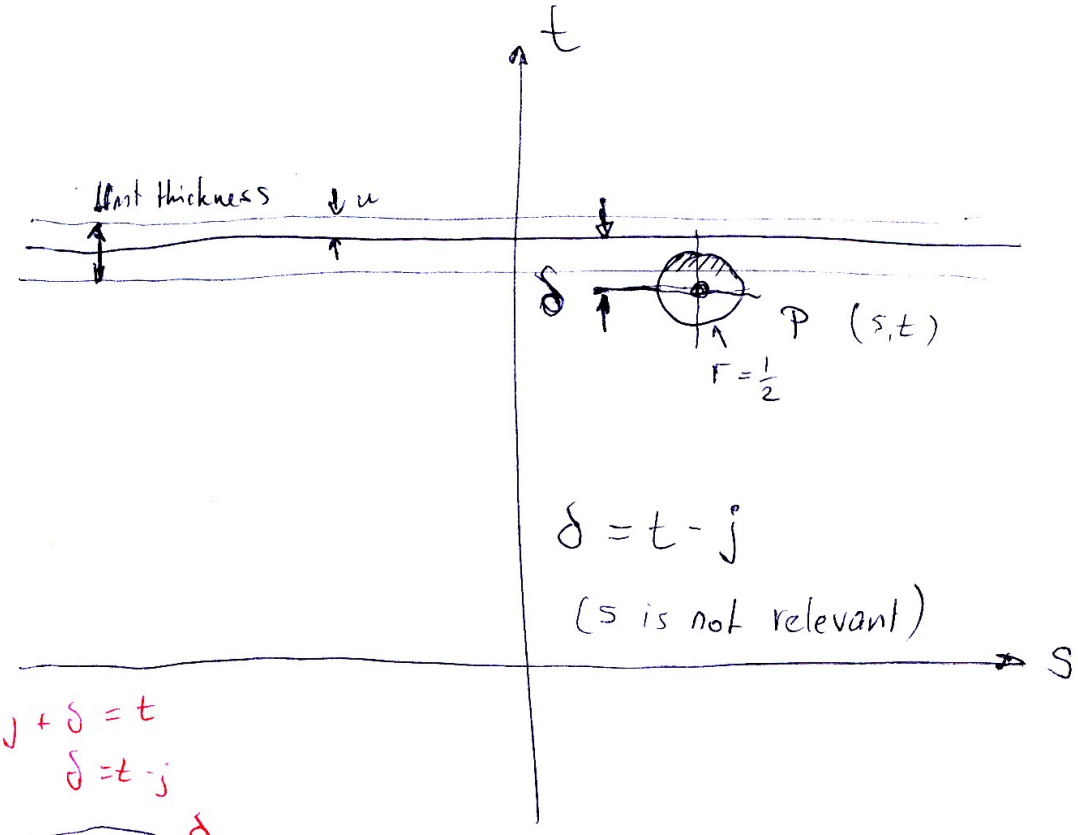
$y = s\sin\theta + t\cos\theta$

$s = x\cos\theta + y\sin\theta$

$t = -x\sin\theta + y\cos\theta$

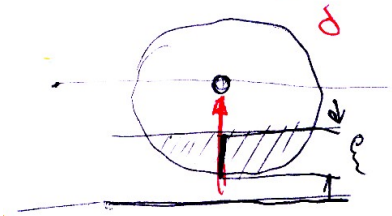
$$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} s \\ t \end{bmatrix} \begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$$

$$\begin{bmatrix} s \\ t \end{bmatrix} = \begin{bmatrix} x \\ y \end{bmatrix} \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$$

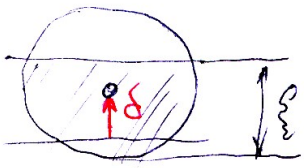


$j + \delta = t$

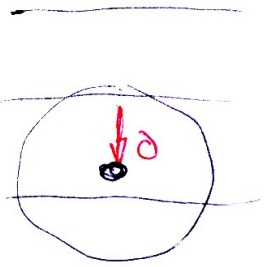
$\delta = t - j$

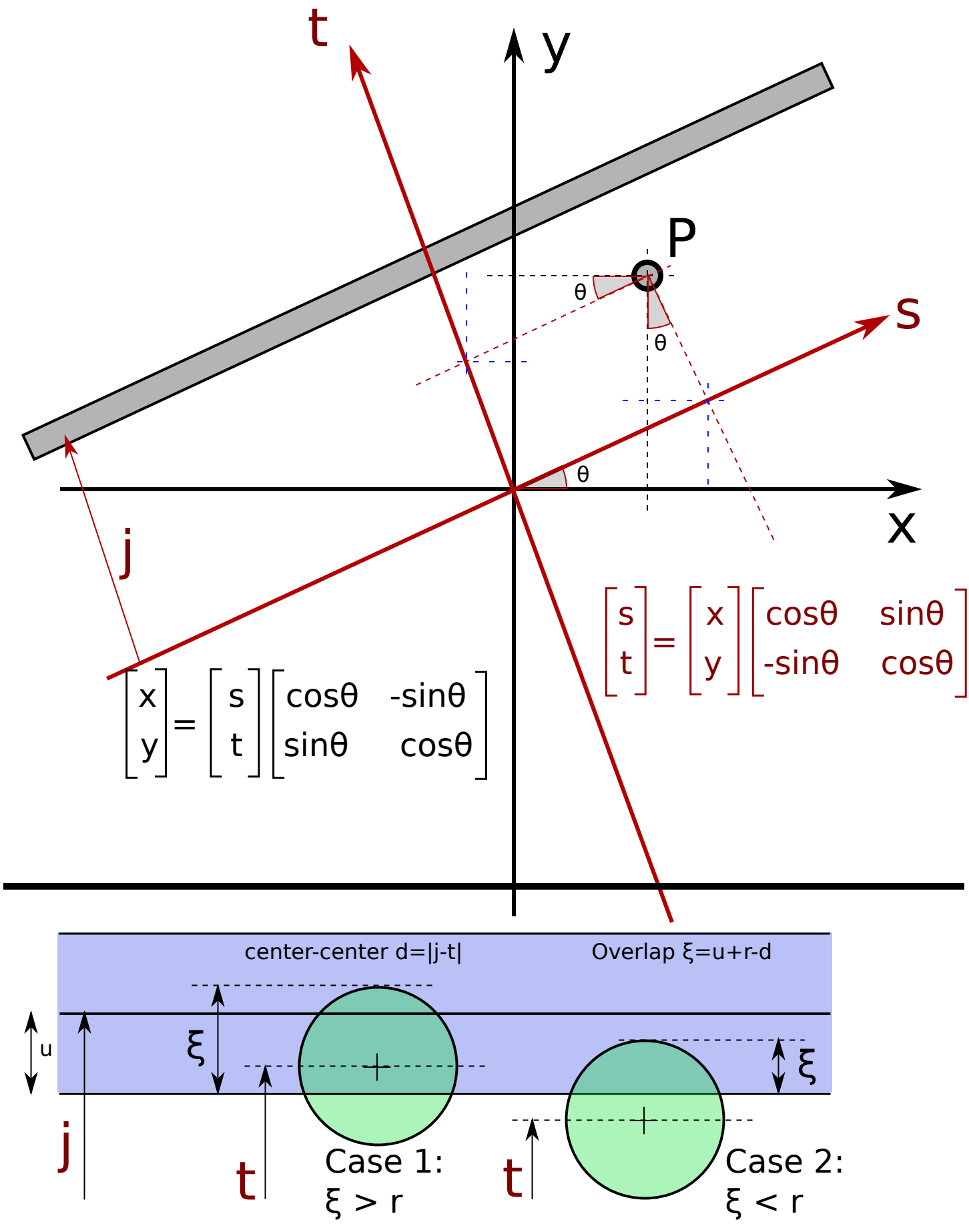


1) $\delta > 0.5$



2) $0 \leq \delta \leq 0.5$




t
y
P
θ
θ
s
θ
x
j
$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} s \\ t \end{bmatrix} \begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$
$\begin{bmatrix} s \\ t \end{bmatrix} = \begin{bmatrix} x \\ y \end{bmatrix} \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$
center-center d=|j-t|
Overlap ξ=u+r-d
u
ξ
ξ
j
t
Case 1:
ξ > r
t
Case 2:
ξ < r