

The *four step algorithm*. What we want is the phase ϕ associated to each point (x, y) . If we consider four measurements and a shift of 90° , the amplitude for a given point in each measurement is:

$$\begin{aligned} A_1(x, y) &= A_0 \cos(\phi(x, y)) \\ A_2(x, y) &= A_0 \cos(\phi(x, y) + \pi/2) \\ A_3(x, y) &= A_0 \cos(\phi(x, y) + \pi) \\ A_4(x, y) &= A_0 \cos(\phi(x, y) + 3\pi/2) \end{aligned} \tag{1}$$

which can be solved for the phase as:

$$\phi(x, y) = \arctan \left[\frac{A_4 - A_2}{A_1 - A_3} \right] \tag{2}$$