$\lambda/2$

$\lambda/4$

?

χ

I_{max}/I_{min}

χ_E

χ_I

ψ

$\chi_I = \arctan(I_{max}/I_{min})$

$\chi_I = \arctan(E_{max}/E_{min})$

χ_I

χ_E

$I_{max}/I_{min} \chi_I \chi_E \psi$

z

θ

$$S_(\theta/2)S_(0)S_(0) = (\cos\theta - \sin\theta \sin\theta \cos\theta), \tag{1}$$

$R(\theta)$

ϕ

$(\theta -$

$2\phi)$

θ

$$S_(0) \cdot S_(\theta) \cdot S_(0) = (\cos^2\theta + i\sin^2\theta (1+i)\cos\theta\sin\theta(-1+i)\cos\theta\sin\theta\cos^2\theta - i\sin^2\theta). \tag{2}$$

$_w aveplate_c alibrations.pdf A comparison of the default detection waveplate calibration and the new one. The new calibration se$

$_e ffects.pdf The effect of rotating the incoming polarisation (P1). The detection waveplates seem to rotate the polarisation for$

$I_\parallel$

$I_\perp$

$$r = \frac{I_\parallel - I_\perp}{I_\parallel + 2I_\perp}. \tag{3}$$

s

p

θ_n

I_{nxy}

?

I'_{nxy}

$$I'_{0xy} = I_{0xy}. \tag{4}$$

I_{nxy}

`findTransformECC()`

I_{nxy}

$I'_{(n-1)xy}$

`warpAffine()`

I'_{nxy}

$$I'_{nxy} = \texttt{warpAffine}\left(I_{nxy}, \texttt{findTransformECC}\left(I'_{(n-1)xy}, I_{nxy}\right)\right) \text{ for all } n > 0. \tag{5}$$

$\bar{I}_0$

$\bar{I}_N$

$$r = \sqrt[N]{\frac{\bar{I}_N}{\bar{I}_0}}, \tag{6}$$

$N+$

1

$$I''_{nxy} = r^{-n} I'_{nxy}. \tag{7}$$

$xy =$

$\sum_n I''_{nxy} e^{i2\theta_n}.$

$xy =$

$\arg(F_{xy}),$

$s_{xy} =$

$F_{xy}/v_{xy},$

$v_{xy} =$

$\sum_n I_{nxy}.$

c

$(0,1)$

α_c

$$c'_{xy} = \left(\frac{c_{xy}}{\max(c_{xy})}\right)^{\alpha_c}. \tag{8}$$

α_f

F_{xy}

?

?

$\cos^2\Delta$

Δ

$$d_\theta = 90. \tag{9}$$

$_s imulation.pdf$ **Top:** *Illustration of the working principle of pSTED. The arrows outside indicate the polarisation of the laser*

?