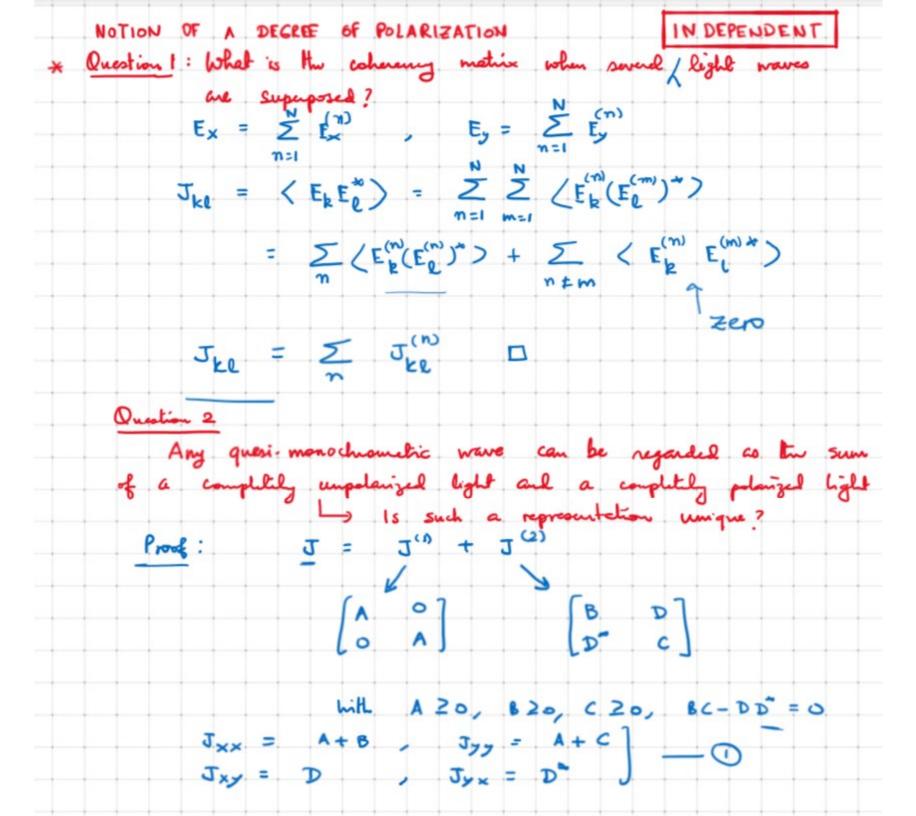
Imax
$$\{0, \xi\}$$
 - Imin $\{0, \xi\}$

I max $\{0, \xi\}$ + I min $\{0, \xi\}$

Examples

(a) Unpolarized light: $I(0, \xi) = constant$ for all $0, \xi$

$$\exists I_{max} = I_{max}$$



```
From determinet condition:
      (Jxx - A) (Jyy - A) - Jxy Jyx = 0
        A - (Jxx + Jyy) A + led(J) =0
       A = 1 (Jxx + Jyy) + 1 (Jxx + Jyy)2 - 4 det ] -2
           del (J) = Jan Joy - Jay Jyx
                 < Jxx Jyy
                 < 1/4 (Jxx + Jyy)2
      Both noots are real and non-negative
Which not is physical?
    A = 1/2 (Jm + J77) I 1/2 ((Jxx + J77)2-4 de J)
    B = 1 (Jxx - Jyy) ( (Jxx + Jyy)2 - 4det J)12
     D = Jx7 , D" = J7x
     C = \frac{1}{2} (Jyy-Jxx) \overline{\Pi} \frac{1}{2} ( (Jxx + Jyy)^2 - 4 dw(J)) \frac{1}{2}
     Bac must be tre
              Chuk: ((Jxx + Jyy)2 - 4 ( Jxx Jyy - Jxy Jyx))]1/2
                   = [(J_{xx} - J_{yy})^{2} + 4 J_{xy} J_{yx}]^{1/2}
                    > \J_xx - Jyy |
```

$$I_{tot} = T_r(\hat{J}) = J_{**} + J_{yy}$$

Degree of polarization:
$$P = I_{pol} = I - 4 det(\hat{J})$$

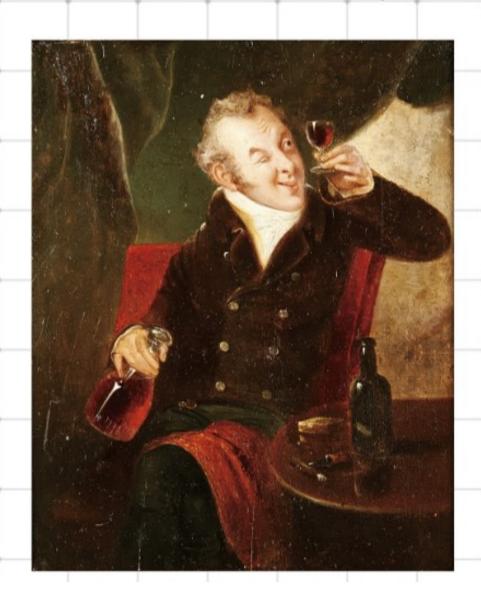
$$I_{pol} = I_{pol} = I_{pol}$$

$$(J_{xx} + J_{yy})^2 - 4 (J_{xx} J_{yy} - J_{xy} J_{yx}) = 0$$

$$(J_{xx} - J_{yy})^2 + 4 J_{xy} J_{yx} = 0$$

Ending of Wave Optics section of PH 202.

What have we become? -Connoisseurs of Light



Maxwell's Equations Stokes and Poincare Brewster Fabry-Perot Huygen-Fresnel Green's identities Kirchhoff Fresnel Fourier Theory Fraunhofer Babinet Statistics of Light Van-Cittert Zernike Michelson Degree of polarization