一. 圆偏 OAM 沿光轴 锥折射后 检线偏

$J_C = \sigma_P / 2$

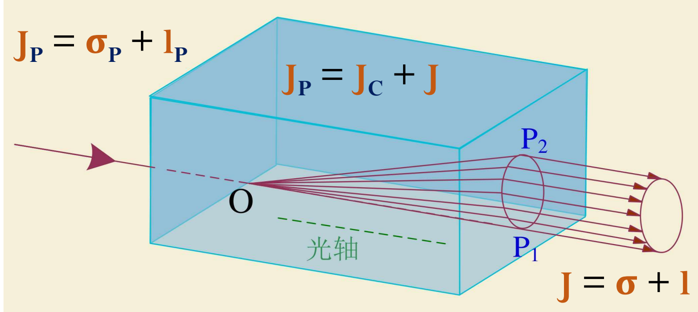
$\sigma_{LP} = 0$

$l_{LP} = J_P - J_C$

光 + 物质 的 总 SAM + OAM 守恒

起偏	σ_P	l_P	J_P	J_C	J	σ	l	检偏	功率
R	1	0	1	½	½	1	0	R	½
						-1	1	L	½
						0	½	VH+–	½
R	1	1	2	½	1.5	1	1	R	½
						-1	2	L	½
						0	1.5	VH+–	½

起偏	σ_P	l_P	J_P	J_C	J	σ	l	检偏	功率
L	-1	0	-1	-½	-½	1	-1	R	½
						-1	0	L	½
						0	-½	VH+–	½
L	-1	1	0	-½	½	1	0	R	½
						-1	1	L	½
						0	½	VH+–	½



This case, where $\rho_0 \gg 1$, $\gamma = 0$, is the most familiar conical refraction situation [3, 4], for which the general formula (21) simplifies:

$$J_{\mathrm{orb}} = \tfrac{1}{2} J_{\mathrm{inc}}, \qquad J_{\mathrm{sp}} = 0, \qquad J = \tfrac{1}{2} J_{\mathrm{inc}}, \tag{24}$$

indicating that the crystal has reduced the angular momentum to half its initial value (15), and transformed it to purely orbital, whatever the initial state.

We have shown that for any biaxial crystal (i.e. $\rho_0 > 0$), with or without optical activity γ, the total angular momentum emerging from the slab is different from that incident on it. Therefore, the light must exert a torque on the slab, tending to rotate it about the incident beam direction. The magnitude of this torque is $J_{\mathrm{inc}} - J$ multiplied by the rate of arrival of photons from the incident beam. It would be interesting to measure this.

2014 - Experimental study of internal conical refraction in a biaxial crystal with Laguerre–Gauss light beams - J. Opt. - Peet