

\* character table

$C_{3i}$	1(1)	$3_{001}^+(2)$	-1(1)	$-3_{001}^+(2)$
$A_g$	1	1	1	1
$E_g$	2	-1	2	-1
$A_u$	1	1	-1	-1
$E_u$	2	-1	-2	1

\* polar  $\leftrightarrow$  axial conversion

$$A_g (A_u) \quad E_g (E_u) \quad A_u (A_g) \quad E_u (E_g)$$

\* symmetric product

	$A_g$	$E_g$	$A_u$	$E_u$
$A_g$	$A_g$	$E_g$	$A_u$	$E_u$
$E_g$		$A_g + E_g$	$E_u$	$2A_u + E_u$
$A_u$			$A_g$	$E_g$
$E_u$				$A_g + E_g$

\* anti-symmetric product

	$A_g$	$E_g$	$A_u$	$E_u$
	-	$A_g$	-	$A_g$