Table 2.5.3.6. *Symmetries of square four-beam CBED patterns for diffraction groups*

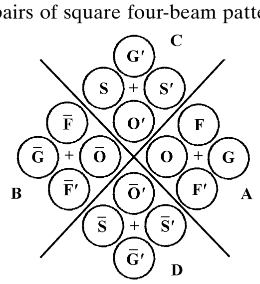
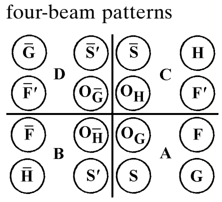
			Projection diffraction group							
			41_R			$4mm1_R$				
Diffraction group			4	4_R	41_R	$4m_Rm_R$	$4mm$	4_Rmm_R		$4mm1_R$
Two-dimensional symmetry			4	(2)	4	4	$4mm$	$(2mm)$		$4mm$
Three-dimensional symmetry				$\bar{4}$	m', $(i, \bar{4})$	$2'$		$\bar{4}$, $2'$		m', $(i, 2', \bar{4})$
Zone-axis pattern	Bright-field pattern		4	4	4	$4mm$	$4mm$	$4mm$		$4mm$
	Whole-field pattern		4	2	4	4	$4mm$	$2mm$		$4mm$
Square four-beam pattern		O	1	1	1	m_2	m_v	m_2	m_v	$m_v(m_2)$
		G	1	1	1_R	m_2	m_v	m_2	m_v	$1_Rm_v(m_2)$
		F	1	1	1	m_2	1	1	m_2	m_2
		FF'	1	4_R	4_R	1	m_v	4_R	4_Rm_v	4_Rm_v
Two pairs of square four-beam patterns 	AB	$\pm O$	2	2	$2(1_R)$	$2m_2$	$2m_{v'}$	$2m_2$	$2m_{v'}$	$2(1_R)m_{v'}(m_2)$
		$\pm G$	2	2	21_R	$2m_R$	$2m_{v'}$	$2m_R$	$2m_{v'}$	$21_Rm_{v'}(m_R)$
		FF'	2	2	2	$2m_R$	2	2	$2m_R$	$2m_R$
		$\pm F$	1	4_R	4_R	1	$m_{v'}$	4_R	$4_Rm_{v'}$	$4_Rm_{v'}$
	AC	OO'	4	4	4	$4m_2$	$4m_{v''}$	$4m_v$	$4m_2$	$4m_{v''}(m_2)$
		GG'	4	4_R	41_R	$4m_R$	$4m_{v''}$	4_Rm_v	4_Rm_R	$41_Rm_{v''}(m_R)$
		FS	4	1	4	$4m_R$	4	m_R	1	$41_Rm_{v''}(m_R)$
		FS'	1	1	1_R	1	$m_{v''}$	m_v	1	$1_Rm_{v''}$
Point group			4	$\bar{4}$	$4/m$	432, 422	$4mm$	$\bar{4}3m$, $\bar{4}2m$		$m3m$, $4/mmm$

Table 2.5.3.7. *Symmetries of rectangular four-beam CBED patterns for diffraction groups*

			Projection diffraction group						
			$m1_R$			$2mm1_R$			
Diffraction group			m_R	m	$m1_R$	$2m_Rm_R$	$2mm$	2_Rmm_R	$2mm1_R$
Two-dimensional symmetry				m	m	2	$2mm$	m	$2mm$
Three-dimensional symmetry			$2'$		m', $2'$	$2'$		$2'$, i	m', $2'$, i
Zone-axis pattern	Bright-field pattern		m	m	$2mm$	$2mm$	$2mm$	m	$2mm$
	Whole-field pattern		1	m	m	2	$2mm$	m	$2mm$
Rectangular four-beam pattern		O	1	1	1	1	1	1	1
		G	1	1	1_R	1	1	1	1_R
		F	m_2	1	m_2	m_2	1	m_2	m_2
		S	1	1	1	m_2	1	1	m_2
Three pairs of rectangular four-beam patterns 	AB	$O_GO_{\bar{H}}$	m_2	1	m_2	m_2	m_v	$m_v(m_2)$	$m_v(m_2)$
		$G\bar{H}$	1	1	1	m_R	m_v	m_v	m_vm_R
		$F\bar{F}$	1	1	1	1	m_v	2_Rm_v	2_Rm_v
		SS'	1	1	1_R	1	m_v	m_v	m_v1_R
	AC	O_GO_H	1	m_v	m_v	m_2	$m_{v'}$	1	$m_{v'}(m_2)$
		GH	m_R	m_v	m_vm_R	m_R	$m_{v'}$	m_R	$m_{v'}m_R$
		FF'	1	m_v	m_v1_R	1	$m_{v'}$	1	$m_{v'}1_R$
		$S\bar{S}$	1	m_v	m_v	1	$m_{v'}$	2_R	$2_Rm_{v'}$
	AD	$O_GO_{\bar{G}}$	1	1	1_R	2	2	1	$2(1_R)$
		GG	1	1	1	2	2	2_R	21_R
		$F\bar{F}'$	1	1	1	$2m_R$	2	1	$2m_R$
		$S\bar{S}'$	m_R	1	m_R	$2m_R$	2	m_R	$2m_R$
Point group			2, 222, $mm2$, 4, $\bar{4}$, 422, $4mm$, $\bar{4}2m$, 32, 6, 622, $6mm$, $\bar{6}m2$, 23, 432, $\bar{4}3m$	m, $mm2$, $4mm$, $\bar{4}2m$, $3m$, $\bar{6}$, $6mm$, $\bar{6}m2$, $\bar{4}3m$	$mm2$, $4mm$, $\bar{4}2m$, $6mm$, $\bar{6}m2$, $\bar{4}3m$	222, 422, $\bar{4}2m$, 622, 23, 432	$mm2$, $\bar{6}m2$	$2/m$, mmm, $4/m$, $4/mmm$, $\bar{3}m$, $\bar{6}/m$, $6/mmm$, $m3$, $m3m$	mmm, $4/mmm$, $m3$, $m3m$, $6/mmm$

The ordinary extinction rules for screw axes and glide planes hold only in the approximation of kinematical diffraction. The kinematically forbidden reflections caused by these symmetry elements appear owing to *Umweganregung* of dynamical diffraction. Extinction of intensity, however, does take place in these reflections at certain crystal orientations with respect to the incident beam (*i.e.* in certain regions within a CBED disc). This dynamical extinction was first predicted by Cowley & Moodie (1959) and was discussed by Miyake *et al.* (1960) and Cowley *et al.* (1961). Goodman & Lehmpfuhl (1964) first observed the dynamical extinction as dark cross lines in kinematically forbidden reflection discs of CBED patterns of CdS. Gjønnes & Moodie