

Supplementary Materials

Table S1. Modal composition of the studied samples.

Sample	Modal composition (%)					
	olivine	tremolite	opx ¹	chlorite	spinel	biotite
443 Trm-rich ²	46	42	12	0	0	0
447	96	1	1	1	0.5	0.5
448	96	1	2	1	0.5	0.5

¹Orthopyroxene; ²Tremolite-rich layer

Table S2. Olivine slip system determined by EBSD mapping along olivine subgrain boundaries.

Slip System	Sample 447	Sample 448
(001)[100]	15	15
(010)[100]	1	4
(0kl)[100]	2	1
(100)[001]	1	-
(010)[001]	1	-

Table S3. Summary of olivine slip systems determined from the thickness fringe method in Figures 6, 7 and 8.

Sample	Figure Number	g^1	n^2	b^3	Line Direction	Slip System
447 dislocation 1	Fig. 6A	211	+2	[100]	[001]	(010)[100]
	Fig. 6B	122	+1			
	Fig. 6C	112	+1			
447 dislocation 2	Fig. 6D	211	-1	[001]	[100]	(010)[001]
	Fig. 6E	122	-2			
	Fig. 6F	112	-2			
447 dislocation 3	Fig. 6G	$0\bar{4}1$	0	[100]	[010]	(001)[100]
	Fig. 6H	$1\bar{3}0$	+1			
	Fig. 6I	$2\bar{4}0$	+2			
448 dislocation 1	Fig. 7A	131	+1	[100]	[001]	(010)[100]
	Fig. 7B	004	0			
	Fig. 7C	140	+1			
448 dislocation 2	Fig. 7D	131	-1	[001]	[100]	(010)[001]
	Fig. 7E	004	-4			
	Fig. 7F	140	0			
448 dislocation 3	Fig. 7G	$\bar{1}30$	-1	[100]	[010]	(001)[100]
	Fig. 7H	041	0			
	Fig. 7I	$\bar{2}1\bar{1}$	-2			
448 subgrain boundary	Fig. 8A	$\bar{1}30$	+1	[100]	[010]	(001)[100]
	Fig. 8B	041	0			
	Fig. 8C	$\bar{2}1\bar{1}$	+2			

¹ Diffraction vector; ² Number of terminating thickness fringes at the extremity of dislocation; ³ Burgers vector

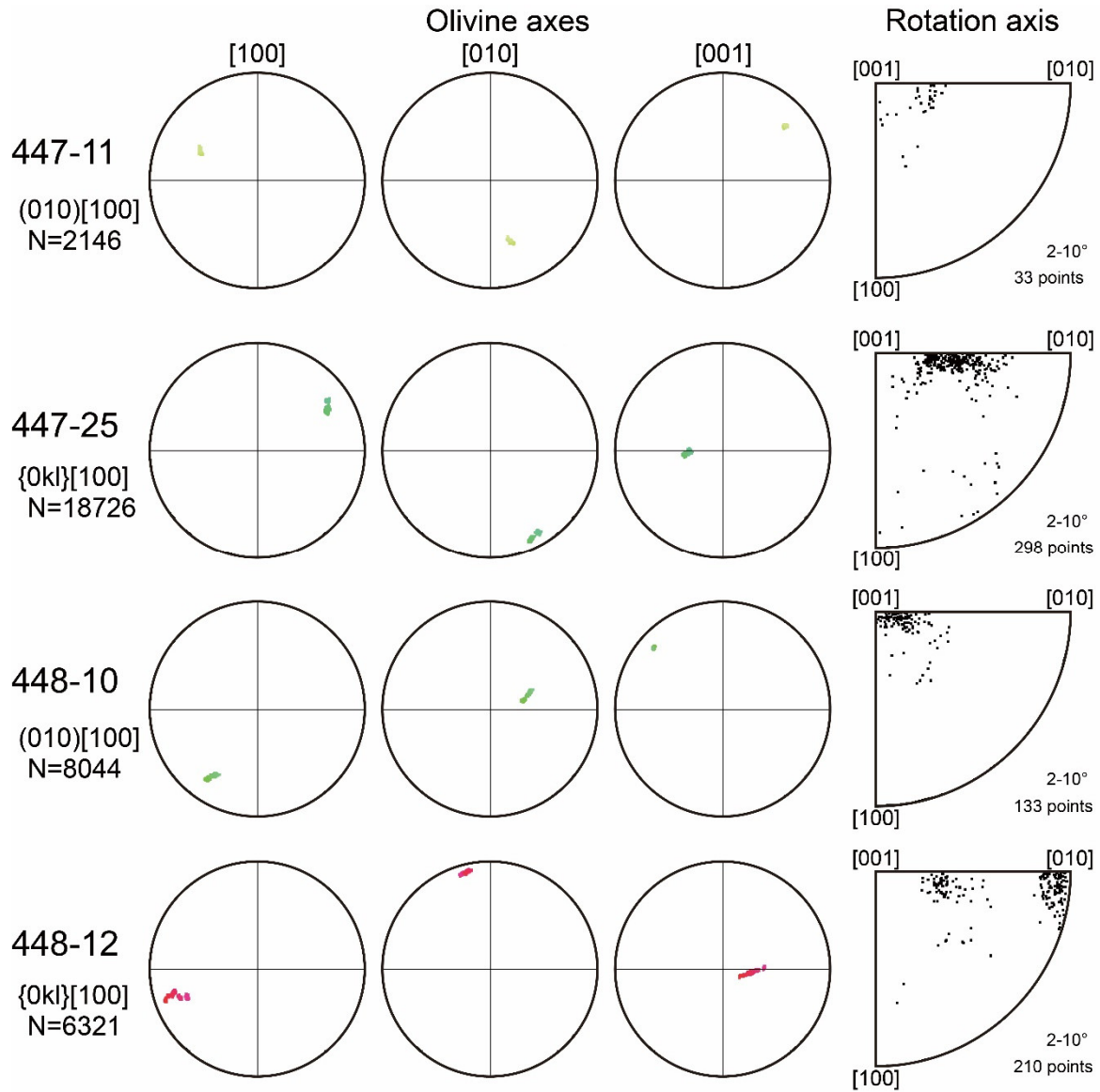


Figure S1. The examples of minor slip systems of the olivine determined from the subgrain boundaries in olivines of samples 447 and 448. The [100], [010], and [001] olivine crystallographic axes are plotted in the lower hemisphere of stereonet. The rotational axis distribution with misorientation angles of 2-10° is plotted in the inverse pole figure. N is the number of data points for each EBSD mapping.