central part of the quarry (Fig. 7a, b) (Becker, 1997). Relict minerals in the peridotites are pyroxenes, olivine, and garnet with kelyphitic rims or kelyphite pseudomorphs after garnet. Garnet is rich in MgO (19–20 wt%) and Cr_2O_3 (3.6–7.6 wt%), and orthopyroxene has relatively high Al_2O_3 = 1.9–3.5 wt% (Table 1). Garnet pyroxenites form thin layers (millimetres to several decimetres) within garnet peridotites. They show a weak foliation, defined by alignment of pyroxenes, which together with garnet, formed by recrystallization of primary, coarse-grained Al-rich clino- or orthopyroxene, as illustrated in Fig. 4 and described by Carswell (1991). Clinopyroxene neoblasts in pyroxenite are rich in Na_2O (up to 4.16 wt%, Table 1). More details about mineral compositions and PT evolution of the ultramafic rocks are given above.

Rock	Lh	Hz	CMe	GCp	GCp	Lh	OMe	CMe	Lh	OMe	CMe	GCp	Hz	Lh	Lh
Mineral	Garnet					Orthopyroxene				Clinopyroxene			Spinel		
position	lamellae					Incl.	lamellae	kelyph	incl		lamellae	incl	matrix	in amph	in amph
SiO_2	41.76	41.28	41.24	40.82	41.74	55.71	56.14	55.75	53.47	51.98	52.32	53.27	0	0	0
TiO_2	0.28	0.13	0.15	0.2	0.1	0.09	0.06	0.06	0.2	0.19	0.25	0.38	0.07	0.05	0.03
Cr_2O_3	3.5	7.62	1.91	0.06	0.54	0.65	0.42	0.46	1.43	1.33	1.44	0.13	33.69	40.72	32.05
Al_2O_3	21.06	18.04	21.69	22.92	23.16	1.95	2.58	2.45	3.56	4.12	4.56	10.33	34.99	28.93	36.42
FeO	6.72	6.97	10.6	9.63	10.76	5.25	5.92	5.97	2.61	2.18	1.79	2.91	15.94	17.2	15.28
MnO	0.38	0.2	0.68	0.17	0.43	0.09	0.16	0.13	0.13	0.08	0.05	0.07	0.08	0.06	0.06
MgO	20.48	19.87	18.6	12.76	18.59	34.53	33.17	34.66	16.63	15.35	15.77	11.2	15.72	12.45	14.63
CaO	5.68	6.62	5.35	13.16	4.95	0.94	0.55	0.44	20.05	23.34	22.41	16.94	0.01	0.04	0.08
Na_2O	0.01	0.03	0.03	0.02	0	0.09	0.04	0.04	1.55	1	1.33	4.16			
Total	99.85	100.77	100.26	99.75	100.26	99.29	99.04	99.95	99.63	99.56	99.95	99.38	100.48	99.445	100.44

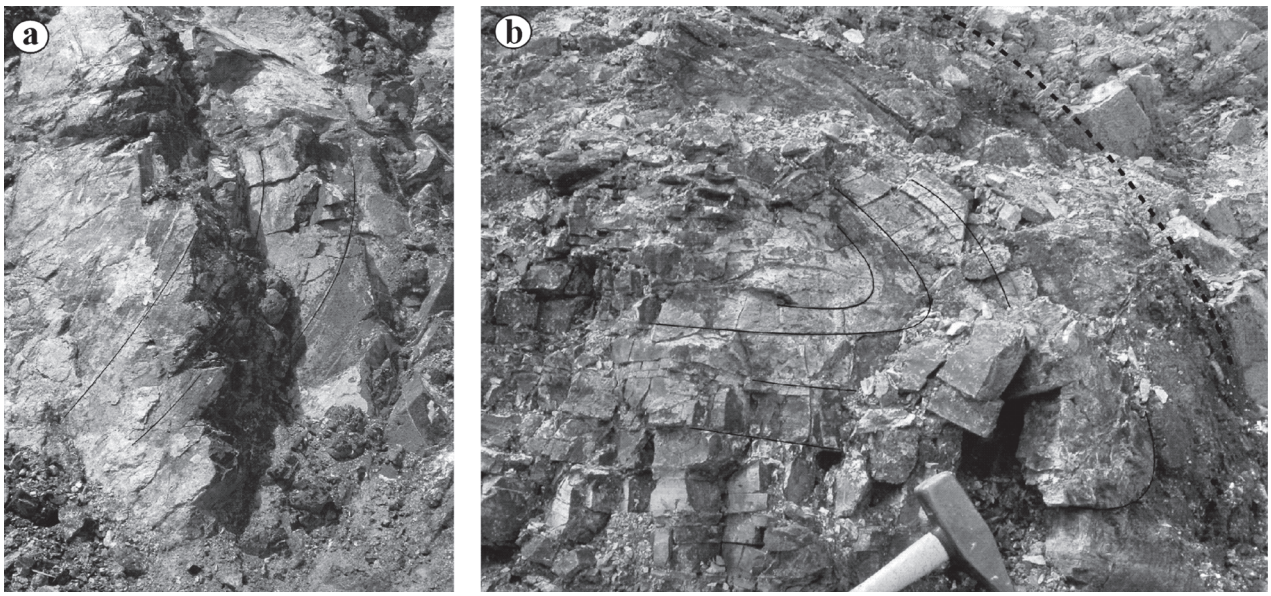
Gnt garnet, Lh lherzolite, Hz harzburgite, CMe clinopyroxene megacryst, OMe orthopyroxene megacryst, Gnt garnetite, GCp garnet clinopyroxenite)

■ **Tab. 1.** Selected mineral analyses from peridotites, megacrysts and pyroxenites (taken from Becker, 1997).

Stop 5-3 (Day 5). Garnet Peridotites, Granulite Quarry Close to Karlstetten, 9 km Northwest from St. Pölten

Coordinates: N48°16′12.9″ E15°33′12.0″

This quarry is a typical example of strongly retrogressed granulites containing boudins and rootless folds of garnet peridotite bodies (Fig. 8a,b). Structures developed in this quarry show vertical shortening affecting the granulite under middle crustal con-



■ **Fig. 8.** Structures in granulites with serpentinized garnet peridotites. (a) isoclinal fold of serpentinized peridotite within retrograded granulite; Karlstetten quarry. (b) large open buckle fold of serpentinized garnet peridotite; Karlstetten quarry.

ditions. Flat lying fabrics in the quarry are structurally concordant with the dominant foliations in the surrounding Gföhl unit gneisses. Microtextural relations and mineral composition of the granulites and garnet peridotites are similar to those in the Meidling-im-Tal quarry, as described above.

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