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Five mantle-derived serpentinized peridotites occurrences from South Armorica (SA: Champtoceaux, Audierne, Britany, France) were studied using optical microscopy, EMP, ICP-OES, solution ICPMS and laser ablation-ICPMS. All but one Champtoceaux lherzolite occurrence are harzburgites which have experienced 12 to 25% partial melting (0.57<Al_2O_3 <1.6 wt.%; Sc <10 ppm; 33<Cr#spinel<67, Yb_N = 1.1-0.3 x CI-chondrites). The lherzolites show fertile compositions (7 < Cr#spinel< 15; Al_2O_3 = 3.0 wt.%; 10<Sc<16 ppm, Ni <2,000 ppm; Yb_N = 1.7) suggesting lower degree of partial melting (5-7%). SA peridotites show overall enrichments in highly incompatible elements (HIE, Cs, Rb, Ba, Th, U, Pb, La) coupled with variable depletion in the high-field strenght elements (Nb, Ta, Zr, Hf, Ti) compared to primitive-mantle estimates.

Each occurrence bears imprints of high-temperature melt/fluid - rock interaction. The most refractory harzburgites show evidence of reactive melt percolation, i.e. U-shaped REE patterns (La/Sm_N = 4.4-6.3; Sm/Yb_N = 0.55). Another Champtoceaux harzburgite occurrence has been pervasively reequilibrated with mafic melts that produced coupled increase in the Fe, Ti, Zn, Cr, V and REE contents (83<Mg#<87; La/Sm_N = 1.5-2.0; Sm/Yb_N = 1 – 2.6). Hydrous modal metasomatism has been identified in both Champtoceaux lherzolites and Audierne harzburgites. The Champtoceaux lherzolites reacted at P = 1.5-2 Gpa for T >900°C with HIE-enriched small-volume fluids that produced 10-15 vol. % of Ti-poor pargasite from clinopyroxene and spinel. The Audierne samples were pervasively refertilized by alkali-rich hydrous melts that precipitated K- and Cr-rich pargasite. Our new data identify SA peridotites as pieces of residual oceanic mantle that were processed to different extent with slab-derived melt/fluids in supra-subduction zone settings.