

**DELAMINATED LITHOSPHERIC MANTLE FROM FAR EAST RUSSIA
AFFECTED BY EXOTIC METASOMATISM**

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In the back-arc environment of Far East Russia, mantle xenoliths from Sikhote-Alin (KO) and Primorie (SV), Far East Russia are fertile spinel lherzolites with amphibole, phlogopite armalcolite, fassaite and röhnite in some of the studied samples. The KO samples have Mg# varying from 89.1 to 89.9 and are slightly more fertile than the SV samples that have Mg# ranging from 89.8 to 90.4. The cpx REE confirm this trend as the $(La/Yb)_N$ in KO samples range from 0.10 to 1.00 and in SV samples from 0.15 to 1.73.

The clinopyroxene Sr and Nd isotopic ratios range from 0.702599 to 0.703567 and 0.512915 to 513153, respectively, resembling Pacific MORB isotopic ratios.

En route breakdown of disseminated amphibole produces second generation of cpx and olivine and traces of glass as well fassaite and röhnite indicating crystallization at very shallow depths. Melt pockets consisting of Ca-rich glass plagioclase rutile, ilmenite and armalcolite suggest introduction of small amount of an unusual Ti-Ca-rich anhydrous silicate melt at mantle depths.

The studied lithospheric mantle represents the residue after partial melting of up to 5% of a primitive mantle. Despite the fact that the studied area experienced several subducting episodes, the lithospheric mantle appears to be unaffected from the upwelling fluids/melts of the subducted slab(s). Since there is no indication for plume activity, and/or evidence for refertilization, it is likely that the lithospheric mantle has been delaminated as the result of tectonic events (lithospheric attenuation, inverse tectonic) associated with the subduction processes and that the studied spinel lherzolites represent upwelling asthenosphere.