

## Origin of garnet pyroxenite xenoliths from Salt Lake Crater, Oahu: Implications for melting processes in Hawaiian mantle plume

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Salt Lake Crater (SLC) in Honolulu, Oahu is a locality with abundant garnet pyroxenite and spinel lherzolite xenoliths. The SLC garnet pyroxenite consist of pyroxenes with complex exsolution textures. Three groups can be defined based on texture and modal composition: (1) spinel-garnet pyroxenite; (2) garnet pyroxenite; (3) olivine-garnet pyroxenite. We reconstructed pyroxene compositions prior to exsolution and calculated igneous stage P-T conditions using the geothermobarometers. Estimated P-T conditions for garnet pyroxenites are 1.5-2.2GPa, 1000-1100C in the final reequilibrium stage and 2.2-2.6GPa, 1100-1300C in the igneous stage and there is no difference between rock types. Origin of the three groups of SLC garnet pyroxenites and their relationship with lherzolite are discussed.