

Supporting Information for

Deducing mineralogy of serpentized and carbonated ultramafic rocks using physical properties with implications for carbon sequestration and subduction zone dynamics

J. A. Cutts^{1†}, K. Steinthorsdottir¹, C. Turvey¹, G. M. Dipple¹, R. J. Enkin², and S. M. Peacock¹

¹CarbMin Lab, Department of Earth, Ocean and Atmospheric Sciences, The University of British Columbia, Vancouver, BC V6T 1Z4

²Geological Survey of Canada-Pacific, Sidney, British Columbia, Canada

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Introduction

Supplementary information for this manuscript comprises six figures (below): S2) Magnetic susceptibility demagnetization corrections; S3) Comparison of density and magnetic susceptibility determined at UBC vs. GSC; and S4) Ultramafic rock classification based on normalized mineralogy abundances. In addition, one Microsoft excel (.xls) file is included that comprises four tabs. Table S1 provides a summary of the samples and number of analyses per locality, Table S2 is the full data compilation, Table S3 shows the instrumentation details and running conditions for qXRD analyses, and Table S4 shows the magnetic susceptibility thickness corrections.

All sample preparation techniques, instrumentation, and analytical conditions are described in the main manuscript and references therein.

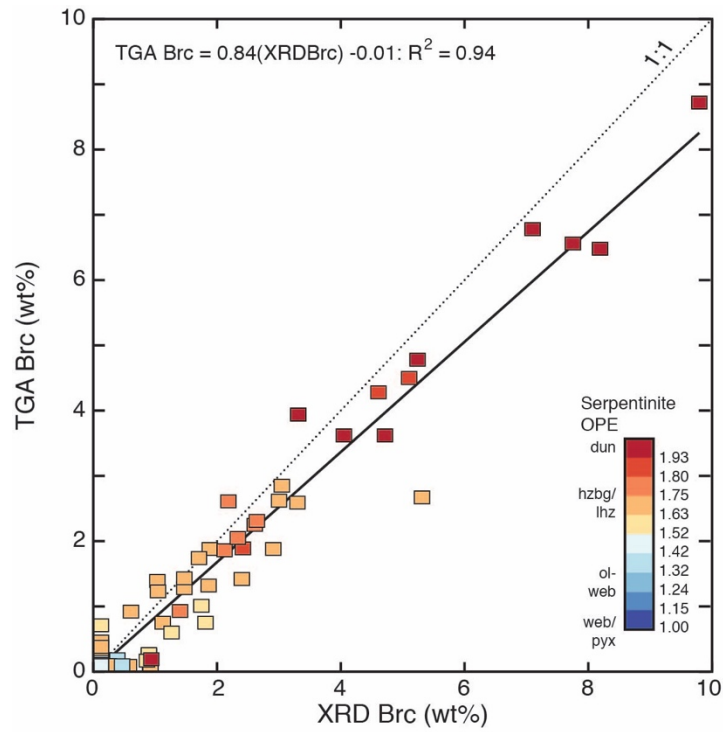


Figure S1. Comparison of brucite abundances determined by quantitative x-ray diffraction and thermogravimetric analysis

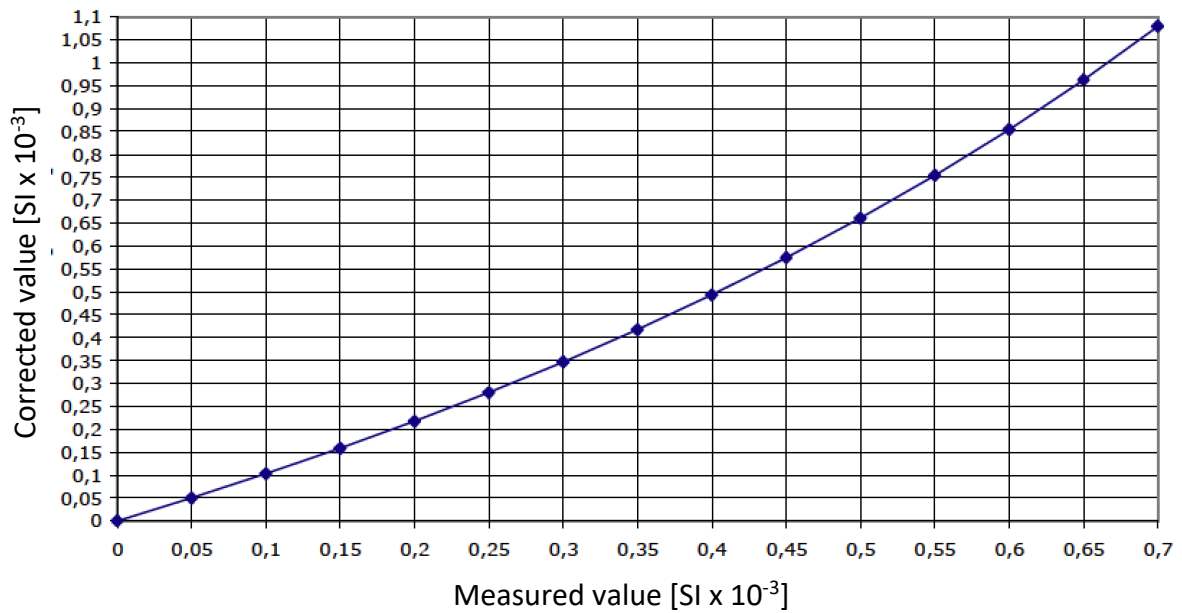


Figure S2. Demagnetization corrections following the instructions manual for the ZH Instruments SM30 magnetic susceptibility meter.

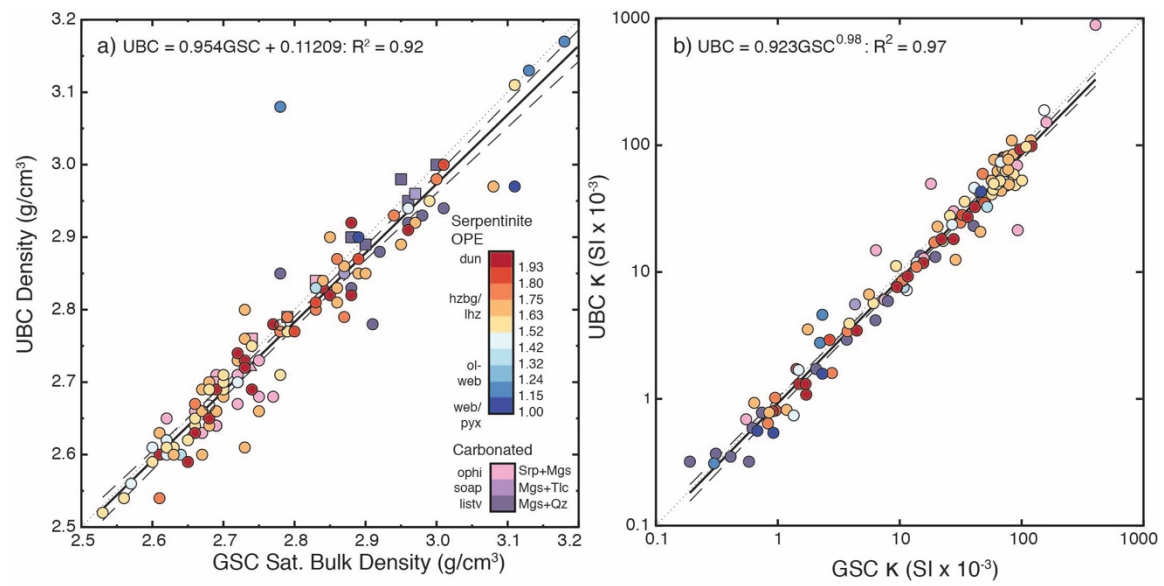
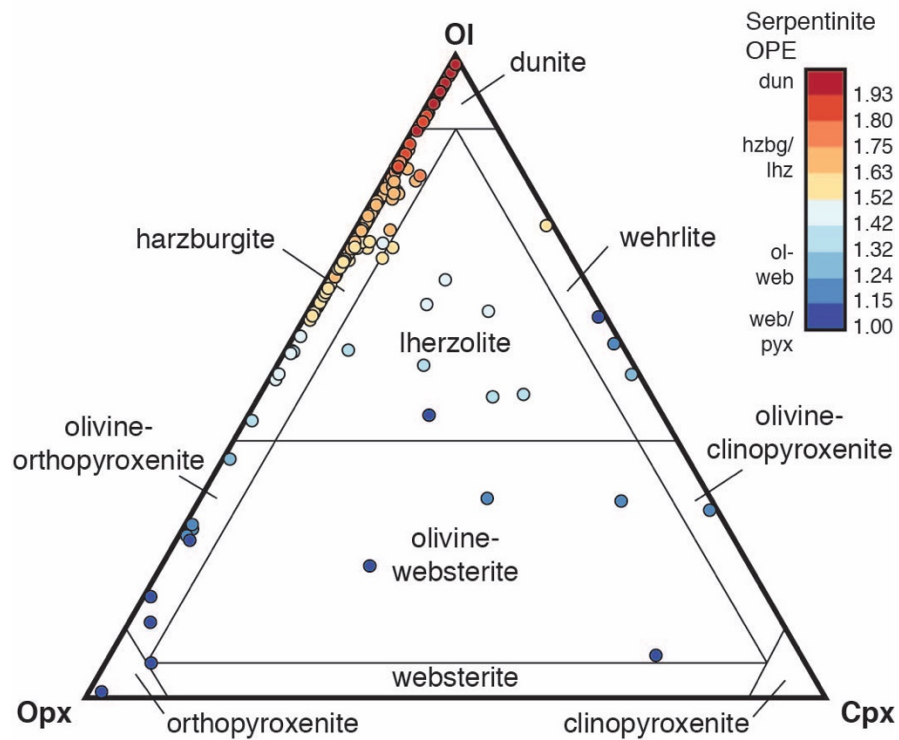


Figure S3. Comparison of a) density and b) magnetic susceptibility measured at UBC and at GSC-PPL

a) Niggli normalization



b) CIPW normalization

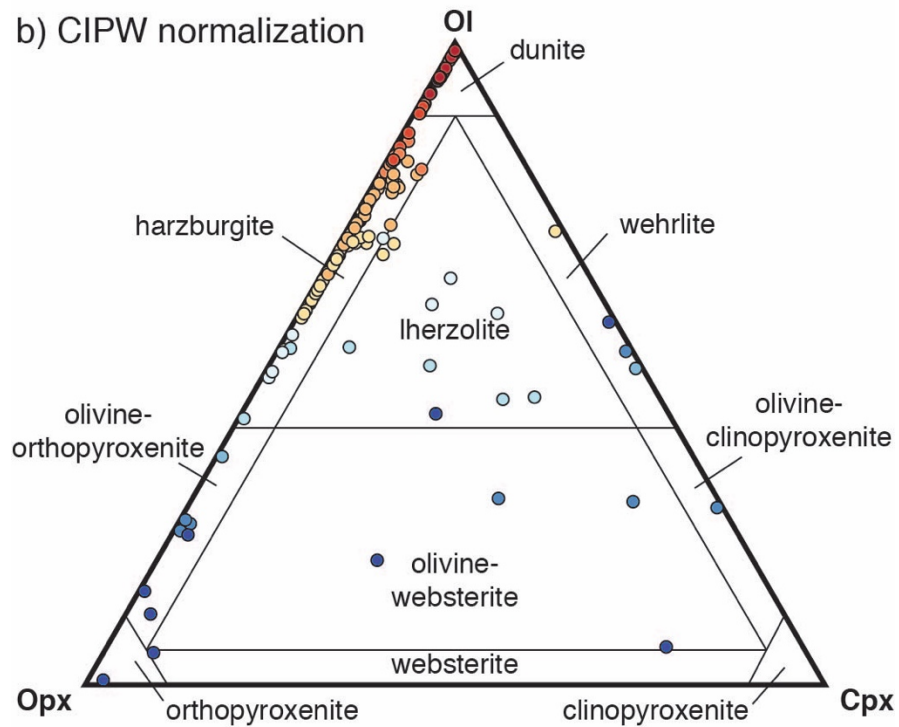


Figure S4. Ultramafic classification ternary diagrams using a) Niggli and b) CIPW normalization mineral abundances. In general, the assigned rock-types on the basis of OPE are similar to those from mineral normalization methods.

Table S1. Summary of the samples and analyses used in this study

Table S2. Compilation of all raw data used in this study.

Table S3. X-ray diffraction instrumentation information, running conditions, and software details

Table S4. Magnetic susceptibility thickness corrections following the instruction manual for the ZH Instruments SM30 magnetic susceptibility meter. Corrections were applied to all magnetic susceptibility measurements done at UBC.