

Fe²⁺–Mg fractionation between orthopyroxene and spinel: experimental calibration in the system FeO–MgO–Al₂O₃–Cr₂O₃–SiO₂, and applications

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The thermometric expression, Eq. (8), in this paper has an erroneous pressure coefficient term that results in 40–50°C higher temperature estimate. The correct pressure coefficient term is 76.26 instead of 122, which is written in the numerator of the equation. With this correction, the discrepancy between the temperature estimates according to olivine-spinel, T °C (Ol-Sp), and orthopyroxene-spinel, T °C (Opx-Sp), thermometers shown in Fig. 7 is substantially reduced. There is no significant difference between the two estimates at $T < 900$ °C. Above 900°C, T °C (Opx-Sp) is 30–75°C higher than T °C (Ol-Sp) that may be due to the problem of resetting of olivine-spinel thermometer, as discussed in the paper. The corrected version of the Fig. 7 of the original paper is shown here as Fig. 7.

In Table 4, A^a and B^a should be read as A° and B°, respectively, while C should read as C^a, with the superscript linked to the explanation below the table.

In response to several questions about what set of parameters (A°, B°, C, D) listed in Table 4 should be used,

we reiterate that it depends on what scheme has been followed to estimate Fe³⁺ in spinel. If it is determined by charge balance, as seems to be the common practice, then the data set listed in the fourth column seems to be the best choice.

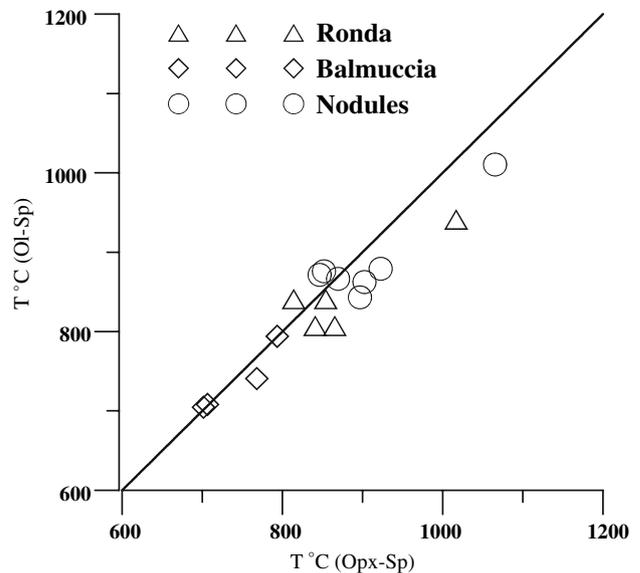


Fig. 7 Corrected version of the Fig. 7, comparing temperatures calculated from orthopyroxene-spinel thermometer that incorporates the correction for the pressure coefficient term and uses the parameters in fourth column of Table 4, as in the original calculations, with those from the olivine-spinel thermometer, which is discussed in the original paper

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