Solid Earth Discuss., 5, C596–C597, 2013
www.solid-earth-discuss.net/5/C596/2013/

Solid Earth
Discussions
Open Access

Interactive comment on "Picroilmenites in Yakutian kimberlites: variations and genetic models" *by* I. V. Ashchepkov et al.

Anonymous Referee #1

Received and published: 14 October 2013

The discussion paper proposed to SED "Picroilmenites in Yakutian kimberlites: variations and genetic models" by I. V. Ashchepkov and numerous co-workers is, on the whole, a monumental work and it took me quite a long while reading and re-reading the entire manuscript and deciphering the 22 (22!) figures, most of them including multi-diagrams with cloudy groups of symbols in a messy frame (i.e. Figs 11-12 and 13 and 22). After an intensive work on it , I have to admit I was not able to fully understand the aim of this paper and the potential results and conclusions. The first chapters dedicated to the introduction and sample (ilmenite) descriptions, which should introduce and present the topic, are difficult simply to read. This encyclopedic paper reports data /(results?) and discussion covering various aspects of the "mantle-melt" systematics, without any logical sequence, leaving the reader disarmed in front of the huge amount of information, most of them not each other related and easy to understand.

Cap. 5 treats the calibration of a (new?) geothermometer or, at least, proposal of an improvement of the previous formulation. Ol-ilm equilibria are accounted for ol-ilm geothermometer, and oxygeobarometer, but I don't really understand the formulation used for determining pressure. Is a new cpx-ilm (with ol correction) geobarometer is here proposed?? (note: pag. 1273: I wan't able to find the definition of "esklaite" component in any of known mineralogical database; may be the authors thought ESKOLAITE. If it is the case, I suggest to the authors to pay much more attention to the draft of the paper)

I think that the geothermometry-geobarometry- redox conditions (oxygeobarometry) theoretical aspects mentioned in Chapter 5 and the results obscurely reported in Chapter 6 themselves, might be good for well constrained future paper. The same consideration could be applied for Chapters 8 and 9. The geochemical characteristics and modeling constitute enough material for a future paper. These latter comments are supported by the fact that a huge amount of data is available for each of the topic considered in this paper (geothemobarometry; geochemistry, mineral chemistry. . .) It was hard work to read all the manuscript. The various, potential interesting aspects are buried in a "muddle-headed" text and crowed diagrams. A reader that wants to learn about the importance of picroilmenites in the complex kimberlitic magmatic system doesn't find anything in this paper that can help to disclose this topic. I am aware that this is discussion paper, and that SE is a "non-conventional" publication, but in my opinion, I don't think that this manuscript, in the current form, can be published in whatever publication.

I have highlighted in the text the evident grammar, syntax errors as well as incomprehensible phrases. I don't know if the editors want to keep this manuscripts available for open comments, may be other researchers with different scientific perception might find aspects not revealed to me.

Interactive comment on Solid Earth Discuss., 5, 1259, 2013.