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Solid Earth Discussions

# *Interactive comment on* "Interpretation of zircon corona textures from metapelitic granulites of Ivrea-Verbano Zone, Northern Italy: Two-stage decomposition of Fe-Ti oxides" *by* Elizaveta Kovaleva et al.

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The paper presents an interesting case of secondary zircon growth as a result of mineral reactions which liberate Zr during cooling and exhumation from high grade conditions. Although the growth of zircon as a consequence of the break-down of ilmenite and rutile, or diffusion of Zr from these minerals during cooling has been described before, the present paper adds an important dimension documenting zircon formation during retrogression even at greenschist facies conditions.

Although one can follow the descriptions and discussions reasonably well, some parts



are rather confused and there is much repetition. Chapter 1 introduces the subjects and reviews the previous literature, but then much of this is repeated again in the second chapter, and then again in the discussion. The latter needs a thorough restructuring, ideally discussing the changes in mineralogy, structures and zircon features and evolution in a logical time progression. Here the discussion starts with the late events eventually getting to the early stages, and circling around and back several times. Chapter 5.2 is mainly a lengthy repetition of what has been said before, with a number of contradictory statements added in.

I have marked the file and added some questions and comments there.

My suggestion is to do a serious restructuring and condensation of the paper, sharpening the logic and cutting out the repetitions. A slender paper about 1/3 in size should be a result which the readers will greatly appreciate.

Febr. 4, 2017 F. Corfu

Please also note the supplement to this comment:
http://www.solid-earth-discuss.net/se-2016-164/se-2016-164-RC2-supplement.pdf

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