



EGUsphere, referee comment RC3
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Comment on egusphere-2022-462

Anonymous Referee #3

Referee comment on "Magnetic fraction of the atmospheric dust in Kraków – physicochemical characteristics and possible environmental impact" by Jan M. Michalik et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-462-RC3>, 2022

In my opinion, the work is poorly organized, which makes it difficult to read. First of all, the authors did not include the purpose of the work, which makes its evaluation much more difficult. It is not clear what the authors wanted to focus on and, as a result, what they wanted to show.

Introduction section - there is no presentation of research results on the magnetic fraction of various types of dust.

Methods section - it is required to complete the information on the research area (reasons why Krakow was chosen), detailed information on the method of collecting samples, and some details on the measurement methods.

In my opinion, the Result and Discussion section should be separated, the first section should present the results (data should not be included in the captions of the figures see Fig. 3 and 4).

Discussion section - here the results of the research should be discussed in accordance with the purpose of the work.

I agree with most of the comments of two earlier Reviewers, so I will not repeat them.

Other commands:

It should be remembered that the magnetic fraction of dust, in fact, are mainly ferromagnetic minerals, *sensu lato*, with relatively strong magnetic properties. The remaining particles (after separation) also have magnetic properties: para- or dia-. So, in this method of separating magnetic particles, do we get rid of particles that exhibit paramagnetic properties? This issue was not discussed.

I. 28 how to understand "dust fall samples"

I. 35 what size is considered to be magnetite nanoparticles

I. 43 PM is an abbreviation; particulate matter

I. 262-263 In Magiera et al. 2021, I did not find information "possibility of superparamagnetic particles being present in the suspended particulate matter was discarded by some authors on the basis of the magnetization measurements"

What about interpretation of curves zero field cooled (ZFC) and field cooled (FC)?

Several references cited in the text are not included in the references section.