In this study, Baldo et al. retrieved the complex refractive index and the spectral single scattering albedo of Icelandic dust between 370-950 nm using measured dust size distribution as well as absorption and scattering coefficients from chamber experiments. The Icelandic dust samples were collected from five hotspots, the composition of which was examined in the companion paper. The optical properties of Icelandic dust were compared with previous studies on Icelandic dust, volcanic ash, and low-latitude dust. They found that the single scattering albedo and the real refractive index of Icelandic dust are within the range of low-latitude dust. However, the complex refractive index between 660-950nm is 2-8 times higher than most of the low-latitude dust, which is likely due to the high magnetite content in Icelandic dust. This finding suggests that Icelandic dust is more absorbing in the near-IR band and thus may have a more positive direct radiative effect.

High-latitude dust becomes increasingly important considering the land ice retreat under a warming climate. Icelandic dust is one of the key sources of high-latitude dust, while understanding of the radiative properties of Icelandic dust is limited. Therefore, this study is interesting and insightful. It fits well within the scope of ACP. I recommend the paper to be published after the following comments are addressed:

- This study uses suspended particles generated from natural parent soils. How are the suspended dust particles different from naturally emitted airborne dust particles, and how do the differences influence the estimates of Icelandic dust radiative properties?
- Section 2.1: I recommend including the location (latitude and longitude) and the time of collection for the five dust hotspots in the supplement. Although they are provided in the companion paper and other papers, it will be helpful for the reader to have the information easily available.
- Line 183-184: this sentence should be reworded slightly. Particle loss correction is further applied to the CESAM size distribution to determine the SW-OPAs size distribution. This is not clear to me until I read Appendix B.
- Section 2.3.2: it is not clear to me why the complex refractive index could be determined through the linear fit between measured and modeled β. Please add some explanation.
- The final k and n are determined by combining base simulation and Test 1. What is the uncertainty of ignoring results from Test 2? Will this cause k and n to be biased toward results from high particle number concentration (N+SD)?
- Line 448: what is the Fe content in low-latitude dust?
- Line 451: similar to the above comment, what is the magnetite fraction in low-latitude dust?
- The solar radiation peaks in the visible band (400 - 700 nm). The 660 - 950 nm wavelength band does not have intense solar radiation. How will this influence the significance of the results?

Editorial comments:

- Line 157: $dN(D_{g,GRIMM})/dlogD_{g,SMPS}$ should be $dN(D_{g,GRIMM})/dlogD_{g,GRIMM}$.
- Line 265: what is Eq. (6)(6) and Eq. (7)(6)?
- Line 396: the abbreviation of the Mýrdalssandur hotspot should also be provided here.
- Figure 1: I think all B_{sca}, B_{abs}, and B_{ATTN} in the diagram should be β_{sca}, β_{abs}, and β_{ATTN}, respectively.
- Figure 3: please use a larger font for the title and the axis title of each panel. The β_{sca} and β_{abs} in the titles are particularly hard to read now.

- Figure S3: which χ, n, and k are used here?