

### **Comments to the author by Topical Editor Juan Alcalde**

The manuscript presents a very good case study to explore the potential of combined non-invasive geophysical methods for mineral exploration. I would like to congratulate the authors because they have replied thoroughly to the minor revisions proposed by the reviewers, and the paper is almost ready to be published.

There is one last thing that I would like the authors to comment. The new added paragraph on the petrophysical properties of the study area really helps to provide an idea on the differences in properties between to be expected. However, when I observe the sections across the geophysical models (fig. 12), it is clear that the resistivity data provide a stronger constraint to the corresponding classification (12.c). This is also observed in fig. 13.a, which shows that the differences in mean values between shear velocities are smaller than in mean resistivity values. I think that the authors should comment on the influence that the two datasets impose in the final classification and to be more explicit in the text about why the combination of the two techniques provides a more robust understanding of the subsurface architecture of the study area.

**We thank the reviewer for his question and welcome the opportunity to clarify this aspect. We agree that the resistivity anomalies, e.g., the gently NW dipping low-resistivity zones (Fig. 12, rows 1 and 4) impose a strong influence on the classification, but the sections in figure 12 also clearly show the influence of the shear velocity distribution, most prominently seen as vertical contacts in sections of row 1, 3, 6 and 7 both in the shear velocity and in the corresponding classification. We have added an explanation under 3.3 and added row labels to figure 12 to guide the reader to these features. The apparently smaller differences in the mean shear velocities compared to the mean resistivity values in Figure 13A is explained by the fact that the datasets, whose original values exhibit contrasting ranges (1.4-3.0 km/s vs. 1.0-4.0 log  $\Omega$ m), are plotted on one and the same y-axis. Regarding the explicitness of the integrative approach, we have added another note on this in the conclusion, but the benefits of the integration of two geophysical parameters have also been highlighted in several other places throughout the text (abstract, discussion).**