 

Dr. André Revil 10/10/2024

EDYTEM

Université de Savoie Mont-Blanc,

Campus Universitaire Savoie Technolac,

73376 cedex, Le Bourget du Lac, France. To: The Editor of Geophysics

[andre.revil@univ-smb.fr](mailto:andre.revil@univ-smb.fr)

T. 33+(0)479 758 715

Dear Assistant Editor Erik Saenger:

Please find enclosed a manuscript entitled “3D joint inversion of induced polarization and self-potential data for ore localization” by Zhaoyang Su, Jinsong Shen, André Revil, Zhongmin Zhu, and Ahmad Ghorbani, for submission to Geophysics. We indeed utilize the same dataset from the sandbox experiment by Su et al (2024), and verified our developed joint inversion code. But we have gone beyond previous work by jointly inverting the IP and SP data using cross-gradient constraint, incorporating the ORI index and K-Medoids clustering algorithm. This approach finally successfully identified ore bodies associated with strong chargeability (IP) and/or source current density (SP). IP and SP methods are wildly used in the exploration, hydrogeology and other fields. Mostly previous works are joint interpretation of these two datasets. To our knowledge, joint inversion of IP and SP data has not been published in journals or conferences. We believe that our paper will appeal to the interest of widest possible international Geophysics and Geophysics audiences. Thank you very much.

Best regards

Dr. André Revil on the behalf of the authors.