

# ***Interactive comment on “High-resolution palaeovalley classification from airborne electromagnetic imaging and deep neural network training using digital elevation model data” by Zhenjiao Jiang et al.***

**Anonymous Referee #2**

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The paper is about a deep-learning (neural network)-based methodology to convert electrical conductivity (EC) data from an airborne electromagnetic (AEM) survey in order to better constrain the three-dimensional palaeovalley geometry from AEM images to a high-resolution binary palaeovalley map and to predict a realistic spatial connectivity structure of the palaeovalley. The paper is original and well structured, so it is of interest for the readers of HESS. I have a few concerns: - The geological description is very synthetical. More details should be given and can you provide the image of a bore log for coherence with the described lithological classes? - My main concern

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is about the scale effect of the AEM measurement to small resolution data, such as bore scale. Can you discuss more about the uncertainty in the bicubic algorithm for image scaling and the calibration/validation of the methodology with real data? - Instead of summarizing the results, the conclusion should focus more on the novelty of the approach compared to other traditional methods. I would suggest to insert the part 'Future work' inside the conclusion to critically discuss the limit of the approach and the proposed future studies to improve it

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