SAGEEP 2023 New Orleans, Louisiana USA http://www.eegs.org

**PERFORMANCE OF THE MASwAI DEEP LEARNING ALGORITHM FOR PREDINCTING THE SHEAR WAVE VELOCITY PROFILE ON A WIDE RANGE OF GEOLOGICAL SETTINGS**

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The MASwAI neural network has simplified the workflow for the interpretation of surface-wave data for Vs30 and shear wave velocity profile measurements. The time required to obtain accurate results through operations such as trace editing, hand picking of the dispersion curve, and higher modes has been reduced from the range of hours to minutes. It has allowed geophysicists to focus on data interpretation of complex data sets instead of time-consuming tasks.

The authors have validated the performance of the algorithm with surface-wave data sets acquired in a wide range of different geological settings from around the world to demonstrate the robustness and accuracy of this deep learning algorithm. Data were gathered from Nordic regions with glacial deposits, large sedimentary basins, tropical regions with indurated layers causing velocity inversions, and more. In addition, other validation tools have been tested, such as correlation with a large number of sCPT soundings, in-situ downhole shear wave velocity measurements, and noise-augmented synthetic data. We will discuss the performance of MASwAI compared to human interpretation for these cases and improvements made to the algorithm following the validation procedure.

The performance of the MASwAI algorithm has allowed the development of optimized processing sequences. The authors will discuss the use of the algorithm for cost limiting and time-consuming surveys such as 2D surface-wave profiling and 3D surface-wave surveys. This will permit a wider use of surface-wave surveys on projects such as wind farm foundation studies, earth and tailings dam assessments and rock mass characterization.