

AFIT - Assessment of Fault Interpretation Tools- A Project.

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Seismic fault interpretation has traditionally been a time-consuming process. Twenty years ago, interpreters building detailed 3D structural models spend 40-70% of project time interpreting faults (1). However, the initial development of attribute based automated and semi-automated fault interpretation tools, and more recently those based on artificial intelligence (AI), has shown promising results in reducing interpretation time. For instance, some studies have claimed up to a 95% reduction in interpretation time with the use of AI (2)

Despite the advancements in fault interpretation tools, it can still be challenging for interpreters to determine the best tool or combination of tools for a specific project. To address this issue, the AFIT (Assessment of Fault Interpretation Tools) project (Figure 1) aims to objectively compare the imaging output of six different fault interpretation tools, including three AI-based tools and three attribute-based tools. To ensure a fair comparison, four conditions were imposed on the assessment: (1) identical seismic input, (2) seismic data from two different tectonic settings, (3) standard/default fault interpretation workflow, and (4) same imaging results display setup.

In addition to the initial conditions, future assessments of the fault interpretation tools will also consider other criteria, such as the degree of integration, including the transition from fault attribute to fault sticks, and from fault sticks to 3D structural models. The findings of this study will provide valuable insights for interpreters in selecting the most appropriate fault interpretation tools for their specific projects, and ultimately contribute to improving the efficiency and accuracy of the fault interpretation workflow.

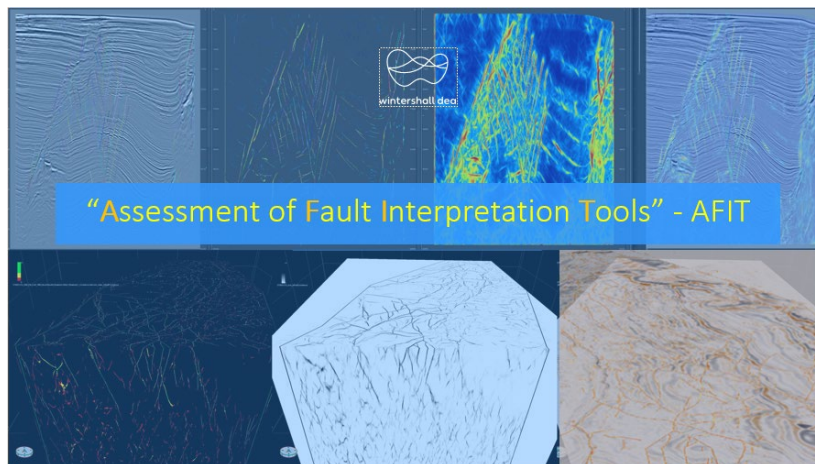


Figure 1: Title slide from The AFIT project.

References

- (1) Hargrave, M. M., Deighan, A., & Haynes, J. (2003). What are interpreters for? – The impact of faster and more objective interpretation systems. Paper presented at the Indonesian Petroleum Association Annual Conference, Jakarta, 14 Oct 2003
- (2) Geoteric. (2023). Geoteric Presentation Series On-Demand: Introducing 2022.2 - Faster more accurate AI Fault Interpretation. Retrieved from <https://www.geoteric.com/presentations-odlive>