

Scalability of Acoustic Full Waveform Inversion on Graphics Processing Units

cards, which may be due to relatively higher GPU cores.

Conclusions

In this paper we have shown the implementation of 2D time domain Full Waveform Inversion in acoustic medium on Graphics Processing Units. Finite Difference Time Domain methods are used for forward modelling, back propagation of residual and computation of gradient function on GPU. The performance analysis of implemented AFWI was carried out on different GPUs, and the results demonstrate the scalability of the codes on different GPU architecture. The numerical test validates the implementation of AFWI. The current implementation is for single GPUs in 2D medium. Further implementation for higher dimension and use of Multi-GPU may be used to achieve higher speedup and industrial scale solutions.

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