

5. CONCLUSIONS

This paper proposed a multi-signal complex exponential method which simultaneously processed multiple signals and could estimate the "global" dominating frequencies (poles) shared by those signals. In comparison to the traditional Fourier-based methods, the proposed method completely avoids the problems associated with frequency leakage and resolution. Another advantage of the proposed method is that it requires only short duration signals to conduct the analysis. In the numerical studies, eight acceleration data sets in the in-line direction from the Norwegian Deepwater Program (NDP) high mode test was utilized, and the traveling wave evidence was effectively revealed by using the proposed multi-signal method.

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