

***Interactive comment on* “Research and Application of an Inner Thrust Measurement System for Rock and Soil Masses based On OFDR” by Yimin Liu et al.**

Yimin Liu et al.

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Dear reviewer 2#:

We are very grateful to this referee comments, and we have carefully read and considered the referee’s comments, and these comments are important for improving the quality of this manuscript.

We are very sorry that you are not satisfied with my article, but I need to explain some actual situations. You said that compares with the FBGs and BOTDR, the OFDR in my paper do not have much advantage, but we think the OFDR technology is very

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suitable for to measure the inner stresses of rock and soil masses, which has a better spatial resolution and cost performance. With the micro-bending pressure sensor in section 2.1 and OFDR demodulator in section 2.2, the OFDR sensing system achieved a spatial resolution of 20 cm using a 500 m test fiber, and the resolution of an OTDR or BOTDR sensing system is generally approximately 0.8~1m. Compares with the FBGs, OFDR has no worse performance than FBG, and the field engineering application mentioned in section 5, over the years we have buried many micro-bending pressure sensors in the Three Gorges reservoir area in China, previously we used the OTDR method to measure the inner thrust, therefore, this study uses a more advanced OFDR method instead of OTDR, instead of using the FBGs. Therefore, the OFDR technology using in inner thrust measurement of rock and soil masses is necessary and reasonable.

Thank you very much for your suggestion and consideration, and we look forward to hearing from you.

Best regards, Yimin Liu and Pu Wang.

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