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Boitnott, G. N., Broadhead, M. K., and Keho, T., H. (2008) "Laboratory Measurements of Modulus Dispersion In Sandstone At Seismic Frequencies" Proceedings of 2011 SEG Annual Meeting, 18-23 September, San Antonio, Texas, 2008

#### Abstract

Using two methods, we obtained measurements of elastic moduli for Berea sandstone at exploration seismic frequencies under dry, full, and partial saturation conditions. We refer to one method as indirect, since lower (0.008 – 0.8 Hz) than seismic frequencies are used, but by controlling fluid (glycerol) viscosity with temperature, the results can be scaled up to higher frequencies (0.1 – 1000 Hz). The second method involves measuring brine saturated core samples directly at seismic frequencies (5–50 Hz).

The results between the two methods compare well, which validates the indirect methodology and gives more confidence overall to both results. These measurements are of value due to recent interest in the oil industry in low frequency velocity dispersion as a gas indicator. Such measurements, of which relatively few are done at seismic frequencies, can help constrain theoretical models.

Contact NER for more information.

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