Waves propagation in saturated rigid porous media: analytical model and comparison with experimental results

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A macroscopic 1D analytical model for describing wave propagation in rigid porous media was developed. It was assumed in the model that both the porosity and the temperature of the solid phase remain constant. The Forchheimer term was added to Euler’s equation in order to describe the momentum and energy exchange between the two phases. Comparison between analytical solutions of the physical model and experimental results were conducted. Excellent agreements were evident.

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