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Nonlocal scale effect on Rayleigh wave propagation in porous fluid-saturated materials

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Highlights:

- A Rayleigh wave model in fluid saturated porous materials based on a nonlocal Biot theory is proposed.
- The nonlocal parameter does not have significant influence on the energy distribution and most of the Rayleigh wave energy is contributed by the shear wave.
- The influence of nonlocal parameters on the loss angle is examined.
- The displacement fields induced by the Rayleigh wave for various frequencies are also investigated.
- The attenuation of the displacement amplitude is strengthened by an increasing nonlocal parameter.

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