Effect of magneto-elasticity, hydrostatic stress and gravity on Rayleigh waves in a hydrostatic stressed magneto-elastic crystalline medium over a gravitating half-space with sliding contact

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Highlights

- Behaviour of Rayleigh wave propagation in a hydrostatic stressed magneto-elastic crystalline medium over a gravitating half-space with sliding common interface is analysed.
- Numerical examples for the crystalline medium based on orientation symmetries, such as triclinic Vosges sandstone, monoclinic Coesite, orthotropic Rochelle salt and simply isotropic have been considered for the study.
- Effects of magneto-elastic coupling parameter, hydrostatic stress parameter and Biots Gravity parameter on the phase velocity of Rayleigh wave propagating through the different crystalline media are analysed and illustrated graphically.
- A small change in magneto-elastic coupling parameter, hydrostatic stress parameter and Biots Gravity parameter brings significant change in the phase velocity of Rayleigh wave.
- Numerical computations and graphical illustrations have been performed to set forth the analytical findings of parametric effects on the Rayleigh wave propagation in the different crystalline media comparatively.