

ABSTRACT:

Problem statement: When the medium porosity especially the saturation degree is asymmetrical, it is expected to see the variation in SV-waves' velocities. Hence, SV-waves propagation in asymmetrical and symmetrical porosity mediums is studied for the influences of fluid density. The SV-waves propagations and the velocities are studied for the diffusive profiles. Approach: For studying the effects of asymmetrical and symmetrical porosity to the diffusive attribute, SV-waves are propagated in similar directions and also opposite directions. The mediums are chosen to fall into two distinctive groups: insoluble as well as soluble mediums. Results: In similar direction of propagation, low density fluid revokes the diffusive characteristics while high density fluid promotes diffusive attribute. However, these diffusive SV-waves are also found in the medium saturated with low density fluid when the medium is asymmetrical in porosity. In the case of opposite direction of propagation, the recurring SV-waves are found in the medium saturated with low density fluid. Conclusions: The studies indicate that SV-waves' propagation direction would emerge different diffusive profiles if the SV-waves velocities are different.