Attenuation analysis for azimuthally anisotropic media

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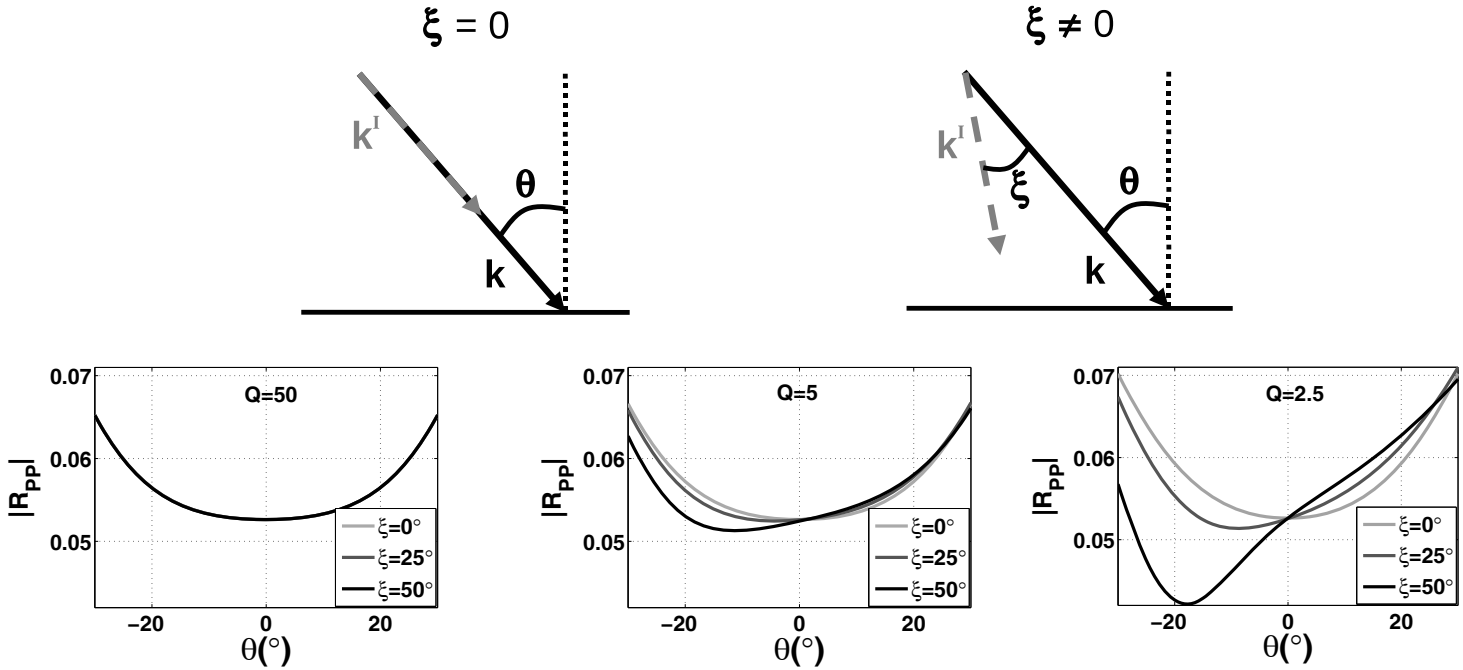
Asymmetric P-wave reflection coefficient for a nonzero inhomogeneity angle



Reflection coefficients in attenuative models depend on the "inhomogeneity" angle ξ between the real (**k**) and imaginary (**k**^{I}) components of the wave vector (the top plots). Our analysis demonstrates that if the incident wave has a nonzero angle ξ (i.e., the direction of maximum attenuation deviates from the direction of wave propagation), the form of the linearized plane-wave reflection coefficient R_{pp} is different from the conventional expression widely used for non-attenuative media. In particular, the PP-wave reflection coefficient is no longer an even function of the incidence angle θ. However, as illustrated by the plots on the bottom, the contribution of the inhomogeneity angle becomes significant only when attenuation is extremely strong, with the quality factor Q<5.