

## Surface waves on a coated elastic half-space with fixed surface

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It is well known that the Rayleigh wave on a homogeneous elastic half-space only exists for a traction-free surface. Recent analysis of a layered half-space with a clamped surface demonstrates a possibility of a surface wave for certain setups. In the present study we are aiming at a multi-parametric consideration of the particular problem of a coated elastic half-space with a clamped surface. For relatively small thickness and stiffness of the coating, we first obtain effective boundary conditions on the surface of a homogeneous half-space. Then, the problem is reduced to a singularly perturbed hyperbolic equation for a Rayleigh-type wave using an earlier established asymptotic technique for surface waves. As a result, an explicit correction to the classical Rayleigh wave speed is derived. Also, the range of problem parameters for which the sought for surface wave exists, is discussed.