

Hardy space methods for problems on unbounded domains

Solving scattering as well as resonance problems for wave equations in open systems, leads to difficulties due to the unboundedness of the domain. Typically they can be separated into interior problems on a bounded domain and comparatively simple exterior problems which, however, are posed on an unbounded domain. While the interior problems can be treated with standard finite element methods, for exterior problems specialized numerical methods are required to obtain physically relevant results. One of them is the Hardy space method. In the talk, an introduction to this method is given, applied to an acoustic waveguide. New approaches of Hardy space techniques for Wood anomalies and elastic waveguides are presented.