

1171-65-19

SLIMANE ADJERID*, 460 McBryde Hall, Department of Mathematics, Blacksburg, 24061,
Tao Lin (tlin@vt.edu), 460 McBryde Hall, Department of Mathematics, Blacksburg, VA 24061,
and **Haroun Meghaichi** (hroun@vt.edu), 460 McBryde Hall, Department of Mathematics,
Blacksburg, VA 24061. *An Immersed Discontinuous Galerkin Method for Acoustic Elastic Wave
Propagation.*

We discuss an immersed discontinuous Galerkin method for wave propagation in acoustic elastic media. The method uses Cartesian meshes which are cut by the interfaces separating different media. Few elements in the mesh are cut by the interface into an acoustic subelement and an elastic subelement. Here we present a procedure to construct special finite elements on the acoustic-elastic elements and derive a DG formulation that uses the proposed spaces. We investigate the stability and convergence of the method and present numerical results for several examples to show the efficiency and accuracy of the method. (Received August 01, 2021)