

**Error and convergence analysis of
p-refinement schemes
for elastodynamics and coupled elasto-acoustics***

**S. Dey^a and L. S. Couchman^b
D. Dutta^c and M. S. Shephard^c**

^aNRL/SFA Inc.
9315 Largo Drive, Suite 200,
Largo, MD 20774
dey@pa.nrl.navy.mil

^bNRL, Code 7131
Washington DC, 20375
couchman@nrl.navy.mil

^cSCOREC, Rensselaer Polytechnic Institute,
Troy, NY 12180
[ddatta,shephard]@scorec.rpi.edu

This talk will discuss issues related to the numerical convergence of various polynomial-degree refinement strategies for displacement-based elastodynamics and pressure-displacement formulation of elasto-acoustics problems. Convergence studies of errors in primary unknown field(s) and well as secondary user-defined quantities of interest, in appropriate norms, are presented. Computational costs associated with specific schemes are also presented.

*The work was done under contract N000173-99-C-2022 from the Naval Research Laboratory, Washington, DC.