Department of Mathematical Sciences

Spring 2016

Colloquium Series

Friday, April 1, 2016 at 3pm in Bell Hall 143

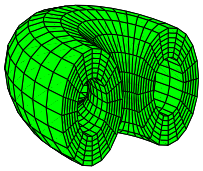
Dr. Granville Sewell

The University of Texas at El Paso

PDE2D, a General-Purpose PDE Solver

PDE2D is a general-purpose finite element program developed by the author over a 40 year period, which solves nonlinear systems of time-dependent and steady-state partial differential equations, and linear eigenvalue systems, in 1D intervals, arbitrary 2D regions and a wide range of simple 3D regions. Both Galerkin and collocation finite element methods are available for the 1D and 2D problems, and collocation is used for the 3D problem. The Galerkin algorithms are standard; the PDE2D collocation algorithms have some novel features, particularly as to how non-rectangular regions are handled.

PDE2D has a graphical user interface so it is very easy to use, and it produces many types of graphical output. At www.pde2d.com there is a list of more than 230 publications in which PDE2D was used to produce the numerical results, and a free version, with limits on the number of unknowns, can be downloaded there.



For further information, please contact Drs. Emil Schwab or Xiaogang Su, eschwab@utep.edu or xsu@utep.edu