Math 615 Numerical Analysis of Differential Equations Spring 2021



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Partial differential equations are pervasive in science, engineering and mathematics. They model fluids, waves, electromagnetism, gravity, weather, and myriad other situations whenever space and time derivatives arise together.

This class is an introduction to the practical approximation of solutions of partial differential equations using a computer. One joy of this topic is the way that theory and practice interweave, and students will come to understand the properties of the main species of PDE vividly in a way that augments theory alone.

Meeting Time:	MWF 9:15-10:15am
Text:	Introduction to Numerical Methods in Differential Equations Mark Holmes
Prerequisites:	A Little Programming Experience Linear Algebra Ordinary Differential Equations Undergraduate Numerical Analysis Exposure to PDEs Or instructor permission (contact me!)

The diagram above depicts ice sheet speeds in Antarctica numerically computed using the PISM ice sheet model, which was initially developed at UAF.