Teaching and Learning the Finite-Element Method – Experiences with a Diverse Graduate Student Body

Topic area: **D. CEM in Education**

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Abstract

The paper reports on aspects of teaching the finite element method (FEM) to power engineering graduate students with different backgrounds, research interests, and professional ambitions at the University of Wisconsin-Madison (USA). The activities described aim to strengthen the ability of the students to discern and identify the important parameters for use of FEM, the students' perceptions of the advantages and limits of numerical simulation tools and their reasonable use, and the need for selective analytical verification. The discussion is extended to include experiences obtained at the Institute of Electrical Machines (IEM) at RWTH-Aachen University. Thereby, the paper seeks to help identify teaching methodologies and best practice for given settings and purposes.