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Topics in computational Electromagnetism

CONTIDO

1. Nodal elements and edge elements. Models in electromagnetism. The cavity problem for Maxwell equations: well-posedness and numerical approximation. Eddy current problems: well-posedness and numerical approximation.
2. Coupled models: nodal elements and edge elements. Complexity reduction via a scalar magnetic potential. Source fields, loop fields and harmonic fields. First de Rham cohomology group and its basis functions. Efficient numerical approximation for eddy current problems.
3. A specific application: magnetoencephalography (MEG). Models: Biot-Savart formula, potential equation, eddy currents. Numerical approximation of the direct problem: subtraction method, Raviart-Thomas current density, piecewise-constant current density. Analysis and approximation of MEG inverse problem.

Inscripción: É gratuita. De cara á xestión loxística, se agradecería a inscrición antes do 12 de xullo (elisa.eiroa@usc.es)

Créditos: Un crédito no programa de doutoramento “*Métodos Matemáticos e Simulación Numérica na Enxeñaría e Ciencias Aplicadas*”.

PFID: Este curso forma parte da oferta do Plan de Formación e Innovación Docente.

Data	16 ao 18 de xullo de 2013
Lugar	Retransmitírase por videoconferencia desde a USC (Aula Seminario 5), UDC (Seminario 2.1) e Uvigo (Laboratorio LD07). Tamén por Adobe Connect.
Horario	11:30 – 13:30