



Seminario Rubio de Francia

Conferencia

por

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Título:

Numerical methods adapted to the presence of thin layers

Resumen: Thin layer phenomena are modelled mathematically by singularly perturbed partial differential equations. These differential equations are characterized by the presence of a small parameter multiplying the highest order derivative term(s). The analytical solutions typically exhibit steep gradients in narrow regions (often called layers) of the domain. Given the presence of these layers, global (as opposed to simply nodal) accuracy of any approximate solution is desirable.

Standard numerical methods typically fail to accurately capture these layers. If one can establish some basic asymptotic information, parameter robust numerical methods can be designed to generate pointwise accurate numerical approximations to the continuous solution throughout the entire domain. This talk will outline the rationale for the definition of parameter-uniform numerical methods and it will also highlight some of the central tools used to construct appropriate numerical methods for a sample of three classes of singularly perturbed problems.

Fecha: Viernes, 7 de Febrero de 2020.

Hora: 12:00 horas.

Lugar: Seminario Departamento de de Ciencia y Tecnología de Materiales y Fluidos, Escuela de Ingeniería y Arquitectura, Edificio Torres Quevedo.