SEMINARIO DE ANÁLISIS NUMÉRICO Y MODELACIÓN MATEMÁTICA

GIMNAP-Departamento de Matemática, UBB
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Expositor:

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Título de la Charla:

3D skeletal muscle modelling

Fecha y Hora:

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Lugar:

Seminario online

Plataforma Zoom

Resumen

Skeletal muscle are living tissues that undergo large deformation due to internal or external forces. Muscle fibres run from one point to another within the whole muscle; such fibres can be actively or passively activated to produce force in order to perform different tasks. In this talk we discuss the challenges and directions we have taken towards the modelling of skeletal muscles. In particular, we discuss a fully dynamic and nonlinear system of PDEs to describe the large deformation of these tissues, the numerical scheme utilized to approximate these deformations, and describe some applications to biomechanics and physiology. Such a nonlinear system is discretized with a semi-implicit scheme in the time variable. A mixed finite element method is used to discretize the space variables of the linearised system.

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