ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ

Εβδομαδιαίο Σεμινάριο

A mixed Euler–Lagrange approach for the incompressible Navier–Stokes equations

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In this talk, we initially review important recent advancements concerning the incompressible Navier–Stokes equations. We further present a mathematical approach that expands fluid mechanics principles, taking under consideration the arbitrary motion of the domain. The initial equations, derived in Euler form, are expanded to a mixed Euler–Lagrange formulation for the incompressible Navier–Stokes equations. Transport equations are transformed into a moving, body–fitted reference frame, using the concept of generalized curvilinear coordinates. Finally, a computational study is presented to highlight the application of the developed mathematical framework in the biomedical field.

Τετάρτη 21 Νοεμβρίου 2018, 6:00μμ

Αίθουσα 201α Τμήματος Μαθηματικών

Μετά την ομιλία ακολουθεί καφές και συζήτηση στο εντευκτήριο του Τμήματος