

## AVVISO SEMINARIO

Il giorno **21 marzo 2018 alle ore 15** in Sala Riunioni, la **Prof.ssa Sevin Gumgum** della Izmir University of Economics, in visita Erasmus presso il nostro Dipartimento, terrà un seminario dal titolo:

### ***"Micropolar and Nano fluid flow in cavities"***

#### Abstract

*In this study, the two-dimensional, transient, laminar flow of viscous and incompressible fluids is solved by using the dual reciprocity boundary element method (DRBEM). The fundamental solution of Laplace equation is used for obtaining boundary element method (BEM) matrices whereas all the other terms in the differential equations governing the flows are considered as nonhomogeneity. This is the main advantage of DRBEM to tackle the nonlinearities in the equations with considerably small computational cost.*

*All the convective terms are evaluated by using the DRBEM coordinate matrix which is already computed in the formulation of nonlinear terms. The resulting systems of initial value problems with respect to time are solved with forward and central differences using relaxation parameters. Mixed convection flow of nanofluids and micropolar fluids in cavities are solved with different geometric configurations. The solutions are visualized in terms of streamlines, vorticity, microrotation, pressure contours, isotherms and flow vectors to simulate the flow behaviour.*

#### Short Bio

*Sevin Gümğüm completed her Ph.D. study in Scientific Computing Program at Middle East Technical University, Turkey (METU). She was awarded with the 'METU thesis of the year award' by the Prof. Dr. Mustafa Parlar Education and Research Foundation. She continued her post doctoral studies in Brunel University, London, UK. She conducts studies about numerical analysis, numerical solutions of ordinary and partial differential equations, finite difference, finite element and boundary element methods, fluid mechanics, infinite integrals and numerical solutions of series.*