

Applied Physics & Machine Learning Seminar Series, IIT Hyderabad

Online webinar on **Nov 03, 2020 at 02:30 PM**



Date : 03-11-2020

Time : 02:30 PM (IST)

Speaker : **Dr. Andrea Scagliarini**

Affiliation : IAC-CNR, Rome

Title : **Exotic dispersions of soft particles: capillary suspensions, hard microgels and hot emulsions.**

Link : <https://meet.google.com/pvv-ocne-xiv>



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Abstract

A plethora of materials, like foams, emulsions, gels, clays, etc, elude the ordinary distinction between fluid and solid. They can display both a viscoplastic fluid-like behaviour or an elastic solid-like one. The inherently multiscale nature of the physics of such complex fluids calls for properly designed numerical models. I will review some recent results, obtained by means of mesoscopic simulations, on three case studies, namely: the microstructural characteristics of capillary suspensions, the rheology of microgels and the heat transfer properties of emulsions, focusing on how processes occurring at the scale of the micro-constituents impact the macroscopic flow behaviour of these soft materials.

Short Bio:

Andrea Scagliarini obtained his PhD in Physics from the University of Rome "Tor Vergata" (Italy) in 2011. After holding PostDoc positions at the Universities of Barcelona (Spain), Eindhoven (The Netherlands) and Rome, he was appointed as Team Leader in the Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (Germany). In 2017 he joined the Institute for Applied Mathematics "M. Picone" (IAC) of the Italian National Research Council (CNR) where he is currently tenured researcher and coordinator of the group "Mathematical Modelling of Fluid Matter". Since 2018 he has also been Chair of the Physical Sciences Working Group (PSWG) of the European Space Agency (ESA).