

INSTITUTUL DE MATEMATICA “SIMION STOILOW” AL ACADEMIEI ROMANE
cu sprijinul BITDEFENDER

Conferinta Lunara

Nematodynamics of liquid crystals

Tudor Rațiu

(Jiao Tong University-China & EPF Lausanne-Elveția)

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la sediul IMAR, amfiteatrul “Miron Nicolescu”, parter

Abstract: The geometric structure of the equations of motion of nematic liquid crystals is described. The two main models, the Ericksen-Leslie director and Eringen micromorphic equations are discussed in detail. The different geometric structures of these two models leads to the solution of a 25 year old controversy in the engineering community establishing a precise relationship between these models, based on the theory of Euler-Poincaré equations on semidirect product with cocycles. Time permitting, well-posedness of the dissipative Ericksen-Leslie equations in both 2 and 3 dimensions will be presented.

