

Institut Ruđer Bošković
ZAVOD ZA TEORIJSKU FIZIKU
Bijenička c. 54
ZAGREB, HRVATSKA

SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

(Zajednički seminari Zavoda za teorijsku fiziku,
Zavoda za eksperimentalnu fiziku IRB-a i Fizičkog odsjeka PMF-a)

Hydrodynamic description of *Drosophila* wing morphogenesis

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Datum: srijeda, 10. rujna 2014.

Vrijeme : **14:00 sati c.t.**

Mjesto: IRB, dvorana I krilo

Abstract:

Tissue remodelling during morphogenesis is usually triggered by biological mechanisms, but it can be strongly affected by mechanical properties of the developing tissue and its surroundings. Understanding tissue mechanics is important part of morphogenesis description. During pupal stage of fruit fly (*Drosophila melanogaster*) development, wings are formed from imaginal discs. We have observed wild type, perturbed and *dumpy* mutant wings from 16 to 32 hours after pupa formation. Specialized software for cell tracking enables us to quantify contributions to tissue deformation from different cellular processes. We developed a hydrodynamic theory which accounts for observed tissue properties. Important contributions arising from active cell behavior differentiate living tissues from 'passive' non-living materials.

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