



Graphics: J.M. Hopkins

פרופסור רודולף פודגורניק

המחלקה לפיזיקה
אוניברסיטת לובליאנה, סלובניה

Professor Rudolf Podgornik

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University of Ljubljana, Slovenia

Lecture – Biopolymer Physics | הרצאה - פיזיקה של ביופולימרים

PHYSICS OF DNA

I will present two cases of scattering in DNA solutions. First the standard X-ray scattering of DNA and the famous Photo 51 of Rosalind Franklin with the elucidation of its double helical structure and then the light scattering with the first measurement of the DNA persistence length. We will see how different scales of the DNA description bring fourth its different microscale and mesoscale properties. After that I will give an overview of the very unusual electrostatics of DNA and the phenomenon of DNA condensation.

The Lecture will be held on Thursday,
18 May 2017, at 15:00,
Flexer Hall (118), Kaplun Building,
Tel Aviv University, Ramat-Aviv.

ההרצאה תתקיים ביום חמישי,
18 במאי 2017, בשעה 15:00,
אולם פלקסר (118), בניין קפלון,
אוניברסיטת תל-אביב, רמת-אביב.

Condensed Matter Seminar | סמינר חומר מעובה

VAN DER WALLS INTERACTIONS, LIFSHITZ THEORY, COULOMB FLUIDS AND ALL THAT JAZZ

I will introduce the Lifshitz theory of van der Waals interactions and analyze the zero Matsubara frequency Lifshitz term in the case of Coulomb fluids (liquid conductors - electrolytes). I will comment on the relationship between the exact classical statistical mechanical partition function of the Coulomb fluids and show that it cancels the zero frequency Lifshitz term and substitutes a classical partition function at full coupling in its place. I will connect the fluctuation determinant in the classical partition function and the van der Waals interactions and discuss two examples of the general theory: screened van der Waals interactions and Kirkwood-Shumaker interactions that originate in dipolar and monopolar charge fluctuations, respectively.

The Lecture will be held on Monday,
29 May 2017, at 11:00,
Flexer Hall (118), Kaplun Building,
Tel Aviv University, Ramat-Aviv.

ההרצאה תתקיים ביום שני,
29 במאי 2017, בשעה 11:00,
אולם פלקסר (118), בניין קפלון,
אוניברסיטת תל-אביב, רמת-אביב.

Light refreshments will be served before the lectures | כיבוד קל יוגש לפני ההרצאות | לפרטים נוספים: http://en.law.tau.ac.il/berg_main | berg@post.tau.ac.il