

רשימת נושאים לעבודות מוסמך ודוקטורט

טלפון / דוא"ל	נושא המחקר	מנחה
giveon@phys.huji.ac.il	<p>1. Supersymmetry breaking and its mediation to the Supersymmetric extension of Standard Model of the electro-magnetic, weak and strong interactions: Assuming that Supesymmetry provides an explanation to the hierarchy between the weak scale and the Planck scale, we shall search for viable models and investigate their phenomenological implications relevant for potentially new discoveries in LHC and Fermilab.</p> <p>2. Supersymmetry breaking and its mediation in string theory: We shall investigate brane constructions in string theory which may give rise to interesting mechanisms for supersymmetry breaking and its mediation, and study their implications in the early cosmological evolution, e.g. inflation and (metastable) vacua population.</p> <p>3. Brane constructions in string theory in various dimensions, and their interplay with field theory.</p> <p>4. The physics of Black Holes in string theory.</p>	פרופ' עמית גבעון
barak_kol@phys.huji.ac.il	<p>1. יישום רעיונות מתורת השדות לתורת הכבידה של איינשטיין</p> <p>2. פתרון הבעיה הדו-גופית בתורת השדות של איינשטיין</p> <p>3. חישובים של חתימות גלי כבידה ממערכת כוכבים בינארית.</p>	פרופ' ברק קול
meerson@cc.huji.ac.il	<p>Non-equilibrium statistical mechanics Theory of large fluctuations in stochastic systems Applications of theory to population dynamics and to other systems</p>	פרופ' ברוך מאירסון
nir@phys.huji.ac.il	<p>1. What can we learn on the weak part of the strong force? 2. Using effective field theory to study electron scattering on light nuclei. 3. Inelastic reactions of molecular clusters in the unitary limit.</p>	פרופ' ניר ברנע

tsvi@phys.huji.ac.il	<p>1. נושאים שונים באסטרופיסיקה של אנרגיות גבוהות ויחסות כללית</p> <p>2. הבזקי קרינת גאמה - ההתפוצצויות החזקות ביותר ביקום</p> <p>3. חורים שחורים</p> <p>4. יחסות נומרית פתרון משואות איינשטיין על ידי מחשב</p> <p>5. קרינה קוסמית</p> <p>6. קרינה גרוויטציונית</p> <p>7. אינפלציה קוסמית והיקום הקדום</p> <p>8. נושאים בתורת היחסות</p>	פרופ' צבי פירן
avishaidekel@gmail.com	Cosmology: Galaxy Formation	פרופ' אבישי דקל
golosovskii@gmail.com	<p>Living cells studies using infrared surface plasmon resonance</p> <p>Infrared spectroscopy based on surface plasmon resonance</p>	דר' מיכאל גולוסובסקי
katzn@phys.huji.ac.il	<p>1. Quantum Coherence in Superconducting Josephson devices - fabrication and characterization of devices - additional manpower required: 1 PhD and 1 MSc</p> <p>2. Quantum memory for optical pulses - participate in building an advanced Atomic-Optical system - additional manpower required: 1 PhD or 1 Msc</p>	דר' נדב כץ
biham@phys.huji.ac.il	<p>1. The development of efficient stochastic methods for the simulation of complex chemical and biological networks. Unlike the commonly used Monte Carlo methods, our methods are based on differential equations derived from the master equation.</p> <p>2. Analysis of genetic regulatory modules in cells. This work is done in collaboration with the experimental group of Nathalie Balaban and with the bioinformatics group of Hanah Margalit.</p> <p>3. Models of diffusion and reaction on disordered surfaces. We analyze the dynamics of chemical reactions on surfaces, with applications to interstellar chemistry.</p>	פרופ' עופר ביהם
israela@vms.huji.ac.il	<p>1. מוליכות-על, תכונות ואפיונים</p> <p>2. חיפוש אחר מוליכי-על חדשים דוגמת פחמן-גרפית</p> <p>3. אפקט מוסבאור</p>	פרופ' ישראל פלנר

4. תכונות מגנטיות של מוצקים

davidov@vms.huji.ac.il	<p>1. The use of Surface Plasmon Resonance at the mid-infrared range to study injection of drugs into life cells. This is done in collaboration with Dr Benny Aroeti from the life Science Institute and Dr Michael Golosovsky. Several PhD students (Victor Yashunsky, Alexander Zilberstein, etc), a postdoc (Vlad Lirtsman) and a Master student (Liora) are involved in this project.</p> <p>2. Coputational physics to design nano-photonic and micro-photonic devices (PhD student :Yair Neve-Oz) . These devices are based on negative refraction or fast light.</p>	פרופ' דן דוידוב
reemsari@gmail.com	<p>1. Planets around other suns and planet formation.</p> <p>2. Stellar dynamics around the galactic center black hole, and hypervelocity stars.</p> <p>3. High energy astrophysics: Gamma Ray Bursts, Supernovae, and shock breakouts of stellar envelopes.</p> <p>4. Hydrodynamics and self similar solutions.</p> <p>5. Radiation effects on asteroids, their rotation and binary evolution.</p>	פרופ' ראם סרי
ami@phys.huji.ac.il	<p>1) Partial dynamical symmetries in nuclei Key question: Can an Hamiltonian have only a subset of solvable states with good symmetry?</p> <p>2) Quantum phase transitions in nuclei Key question: Phase transitions governed by a control parameter in the quantum Hamiltonian</p> <p>3) Supersymmetries in nuclei Key question: Symmetries incorporating bosonic (collective) and fermionic (single- particle) degrees of freedom</p>	פרופ' עמי לויתן
yionashkenazy@gmail.com	<p>1. Kinetics of the solid to liquid phase transition.</p> <p>2. Melting of embedded nano clusters.</p> <p>3. Simulations of Nanostructures formed via severe plastic deformation.</p> <p>4. Point defects in simple liquids</p>	ד"ר יינון אשכנזי
paul@vms.huji.ac.il	1. Nuclear astrophysics at the Soreq Applied Research Accelerator	פרופ' מיכאל פאול

	<p>Facility (SARAF)</p> <p>2. Development of experimental techniques at the Soreq Applied Research Accelerator Facility (SARAF)</p> <p>3. Search for short-lived nuclides carried by interstellar dust into the Solar System.</p>	
barak_kol@phys.huji.ac.il	<p>Novel Field Theory methods in Einstein's Gravity Explanation: We apply to Einstein's Gravity some of the deepest notions of (Quantum) Field Theory, including action methods, Feynman diagrams, loops, regularization of divergences and renormalization.</p>	פרופ' ברק קול
doron.gazit@mail.huji.ac.il	<p>1. Neutrino interactions from light nuclei to matter in astrophysics.</p> <p>2. Parity violating weak reactions.</p> <p>3. Weak interaction in strong(ly) interacting environments</p> <p>3. The structure of graphene.</p> <p>4. Phases of crystalline membranes - from red blood cells to graphene</p>	ד"ר דורון גזית
jay@vms.huji.ac.il	<p>I am looking for two excellent graduate students for two separate experimental projects:</p> <p>1. The study of fast processes in friction</p> <p>2. The study of fracture processes</p>	פרופ' ג'יי פיינברג
nathalieqb@phys.huji.ac.il	<p>Open positions for one excellent MSc student and one excellent PhD students in the following subjects:</p> <ul style="list-style-type: none"> - Symmetry breaking in biological systems: experiment and theory - Quantitative studies of sub-cellular processes <p>The work involves the development of new biophysical tools for the analysis of biological systems: optical lithography, microfluidics, automated microscopy and quantitative image analysis.</p>	פרופ' בלבן נטלי