Name: Mr **Michal Artymowski**
Institution: Institute of Theoretical Physics, UW

Title: Loop Quantum Cosmology corrections to inflationary models

Abstract: During the recent years the quantization methods of Loop Quantum Gravity have been successfully applied to the homogeneous and isotropic Friedmann-Robertson-Walker space-times. Resulting theory, called Loop Quantum Cosmology (LQC), resolves the Big Bang singularity by replacing it with the Big Bounce. We argue that LQC generates also certain corrections to field theoretical inflationary scenarios. These corrections imply that in the LQC the effective speed of sound becomes infinite at some point after the bounce and that the scale of the inflationary potential implied by the COBE normalisation increases. LQC tends to weaken the problem of initial conditions for inflation.

Name: Dr **Eugeny Babichev**
Institution: APC Paris

Title: Spherically symmetric solutions of massive gravity and the Goldstone picture

Abstract: We study spherically symmetric solutions of massive gravity. In particular, we concentrate on the decoupling limit, for which the Goldstone picture is especially useful. In the case of the spherical symmetry we find the equivalence between the ``standard'' and the Goldstone descriptions. A new Vainshtein-like solution is found and it is clarified why the Vainshtein mechanism does not work for the original Vainshtein solution. Numerical investigations shows that for some potentials a well-behaved solution exists, the asymptotic behaviour of which is given by this new solution. However, for the full system (not in the decoupling limit) the solution turns out to be divergent. We briefly discuss the obtained results.

Name: Mr **Guillermo Ballesteros**
Institution: Instituto de Física Teórica, Universidad Autónoma de Madrid

Title: the Effect of Dark Energy Perturbations on the Growth of Structures

Abstract: The growth of matter perturbations in the presence of dark energy with small fluctuations depends on the speed of sound of these fluctuations and the comoving scale. The growth index can differ from the value that it takes in the limit of no dark energy perturbations by an amount comparable to the accuracy of future observations.

Name: Mr **Anders Basbøll**
Institution: Physics, University of Aarhus

Title: Non-perturbative particle production from SUSY flat directions - a spoiler of delayed thermalisation?

Abstract: The (possible) existence of Supersymmetry changes (p)reheating of the Universe. In the minimal SUSY (MSSM) there are more than 300 flat directions -

directions in field space with vanishing potential. One or more of these can develop Planck-size vacuum expectation values during inflation. This will give high masses to MSSM particles, thus delaying thermalisation and lowering the reheating temperature, providing a solution to the gravitino problem. However, all this depends on the flat directions being able to store energy long enough before they decay. This will not happen if the flat direction can decay through a parametric resonance - preheating. Earlier studies have either been on toy models, or "rule-of-thumb"-based. I have done a full calculation of actual MSSM flat directions in the unitary gauge to get rid of unphysical goldstone particles. I found that for the 2 most cosmological attractive directions, UDD,LLE there is no particle production - not even with both directions combined. But QLQLQLE will produce particles, the same will QLD+LLE directions existing simultaneously.

Name: **Diana Battefeld**
Institution: HIP/APC

Title: Preheating after Multi-Field Inflation

Abstract: We study preheating in multi-field inflation using N-flation as a concrete example, assuming the Marcenko Pastur distribution, equal energy initial conditions at the beginning of inflation and equal axion-matter couplings. By numerical analysis we find that preheating via parametric resonance is suppressed, indicating that the old theory of perturbative preheating is applicable. While the tensor to scalar ratio, the non-Gaussianity parameters and the scalar spectral index computed for N-flation are similar to those of single field inflationary models, our results suggest that the physics of preheating can differ significantly from the single field case.

Name: **Charalampos Bogdanos**
Institution: Univ. of Ioannina

Title: LEP II constraints on brane models with bulk leptons

Abstract: We will discuss a five-dimensional brane model, where leptons and gauge fields are bulk fields, while quarks are confined on a 3-brane. This construction lies in-between the Universal Extra Dimensions models and the total confinement of all fermions on the brane. We examine a case where the extra dimension is compact and has no curvature, as in the usual Kaluza-Klein theory. A number of processes which would give constraints to the size of the extra dimension is presented, along with some preliminary fits from LEP II data, at energies of up to 207 GeV.

Name: Dr **Claia Bryja**
Institution: City College of San Francisco

Title: A Hypothesis Connecting Dark Energy, Virtual Gravitons, and the Holographic Entropy Bound

Abstract: We present a model in the which the cosmic dark energy arises from virtual gravitons possessing such low energies that their Heisenberg lifetimes exceed the age of

the universe. Assuming the wavelengths of gravitons stretch in proportion to the cosmic expansion scale length, there exists a time-dependent energy threshold below which a virtual graviton lifetime would be extended indefinitely within an accelerating universe. Unlike the case of exponentially inflationary vacuum energy, the effective equation of state of such infinitely long-lived virtual gravitons (ILVGs) would maintain consistency with the proposed holographic bound on the total entropy contained within the cosmological apparent horizon. If a graviton is a quantum of spacetime curvature, then we may observe only a small dark energy component to the universe when the global curvature also is small. In this model, the value of the effective "cosmological constant" would have increased until the recent onset of cosmic acceleration and decreased thereafter. Saturation of the holographic entropy bound is shown to be consistent with a universe dominated by a nearly critical density of ILVGs. Further postulating an equivalence with the saturated holographic bound for black holes then predicts a value of the effective cosmological constant that is in excellent agreement with the value observed. The model's predicted time variation of the dark energy also remains within present observational constraints.

Name: Mr **Sebastien Clesse**
Institution: Brussels University - Louvain University

Title: On the initial conditions in hybrid inflation.

Abstract: Using an exact numerical integration, we study the multi-field dynamics of various hybrid inflationary models. In particular, we discuss the fine-tuning problem associated with subplanckian initial field values in the context of smooth and shifted hybrid inflation as well as radion assisted gauge inflation.

Name: **Hael Collins**
Institution: Niels Bohr International Academy

Title: Trans-Planckian relics in the scalar to tensor ratio

Abstract: The properties of nature at extremely small scales are usually thought to have little influence on much larger ones. However, the dramatic expansion of the universe that occurs during inflation can break this clean separation between the large and the small. Since in the inflationary picture the spatial asymmetries of our universe come about through quantum fluctuations, with a sufficient amount of expansion the structures that we see today would have begun as quantum fluctuations on a scale smaller than a Planck length. This observation corresponds to the trans-Planckian problem of inflation. This talk briefly describes this problem and discusses how it could differently affect the curvature fluctuations and gravity waves generated by inflation, altering some of the standard "consistency relations" between them.

Name: Mr **Timur Delahaye**
Institution: LAPTH Annecy, France

Title: Positron cosmic rays : theoretical uncertainties

Abstract: Indirect detection of dark matter through positron cosmic rays have been of a great interrest since HEAT and AMS01 data. Soon PAMELA will give a more accurate mesurement of the positron flux at the Earth. However before claiming seeing any excess one should care about the theoretical uncertainties that concern the background and the putative exotic signal from galactic dark matter annihilation.

Name: Mr **Andrea Ferrantelli**
Institution: Helsinki Institute of Physics

Title: WW scattering in the broken phase with production of gravitinos

Abstract: The abundance of gravitinos in the universe constitutes a central topic in modern Cosmology, since such a particle is a very attractive candidate for Dark Matter in various cosmological scenarios. In this talk, the scattering of two massive W bosons, that can be observed as a secondary process at the LHC, is investigated in the context of Supergravity. We analyze both the gauge and mass eigenstates, giving emphasis on the role of the Higgs boson. Differently from what has been previously obtained in the high energy limit, at low energies we find in the scattering amplitudes new structures, which superficially could lead to violation of unitarity.

Name: Dr **Michael Gustafsson**
Institution: Padova

Title: Gamma Rays from Dark Matter Annihilation

Abstract: A way to identify the dark matter as beyond-standard-model particles would be to discover characteristic signals in the gamma-ray sky. I will present characteristic features expected form annihilating WIMPs (weakly interacting massive particles). As an example, I will focus on one of the simplest extensions of the standard model - the inert higgs model - and its potential to be discovered by the launched GLAST satellite. If time permits, I will also discuss gamma-ray signals from supersymmetry and universal extra dimension models, as well as the necessity to check self-consistency of predicted dark matter signals.

Name: Dr **Jan Hamann**
Institution: LAPTH, Annecy-le-Vieux

Title: Detecting effects of trans-planckian physics with cosmological precision measurements

Abstract: New physics at energies beyond the Planck scale may leave traces in the curvature perturbations generated during inflation. I will address the question under which conditions these traces can be detected by planned future experiments. In particular I will discuss what kind of constraints can be expected by probing the primordial spectra via CMB anisotropies, large-volume galaxy redshift surveys and surveys of the distribution of neutral hydrogen using the 21cm spin-flip line.

Name: Dr **Paul Hunt**
Institution: University of Warsaw

Title: Constraints on large scale voids from WMAP-5 and SDSS

Abstract: Measurements of the SNe Ia Hubble diagram which suggest that the universe is accelerating due to the effect of dark energy may be biased because we are located in a 200-300 Mpc underdense "void"
which is expanding 20-30% faster than the average rate. With the smaller global Hubble parameter, the WMAP-5 data on cosmic microwave background anisotropies can be fitted without requiring dark energy if there is some excess power in the spectrum of primordial perturbations on 100 Mpc scales. The SDSS data on galaxy clustering can also be fitted if there is a 10% component of hot dark matter in the form of 0.5 eV mass neutrinos. We find however that if the primordial fluctuations are gaussian, the expected variance of the Hubble parameter and the matter density are too small to allow such a large void. By the same token the void said to be responsible for the WMAP "cold spot" is extremely unlikely in a gaussian density field.

Name: Mr **Philip Roland Jarnhus**
Institution: Århus Universitet

Title: The Trispectrum of Curvature Perturbations in Single-field Inflation

Abstract: To be announced

Name: Mrs **Ju Min Kim**
Institution: University of Bonn

Title: Embedding MSSM inflation within the Left-Right symmetric model

Abstract: Motivated by the recently proposed MSSM inflationary model by Allahverdi et al., we investigate possibilities of inflation driven by the flat direction, $Q_cQ_cQ_cL_c$, of minimal Left-Right (LR) symmetric model. We consider the cases separately depending on whether the LR symmetry is preserved during inflation or not. We also analyze the model with additional symmetry which suppresses this operator. Furthermore, we briefly describe the post-inflationary mechanism, i.e. preheating and particle production. We find that the low-scale inflation with gauge invariant combination of squarks and sleptons remains viable when the symmetry is extended to the minimal LR, although it depends on the initial conditions. The post-inflation mechanism proceeds differently on each branch.

Name: Dr **Thomas Konstandin**
Institution: IFAE, Barcelona

Title: Gravitational Waves by Bubble Collisions

Abstract:

We reexamine the gravitational wave production by bubble collisions during a first-order phase transition. We find that the spectrum rises as f^2.8 for small frequencies and decreases as f^-1.0 for high frequencies. Thus, the decrease at high frequencies is significantly smaller than previously stated in the literature. This is essential for experiments as LISA or BBO that exhibit the best sensitivity usually at frequencies that are higher than the typical peak frequency predicted by a strong first-order electroweak phase transition.

Name: Ms **Anna Kostouki**
Institution: King's College London

Title: Tachyon-Dilaton Inflation as an alpha'-non perturbative solution in first quantized String Cosmology

Abstract:
Applying a novel non-perturbative functional method framework to a two-dimensional bosonic sigma model with tachyon, dilaton and graviton backgrounds we construct exact (non perturbative in alpha') inflationary solutions, consistent with world-sheet Weyl Invariance. The mechanism for inflation entails a (partial) "alignment" between tachyon and dilaton backgrounds in the solution space, in a way to be explained in detail in the talk. Some speculative remarks as to how one can exit from the inflatinary phase, as well as possible scenarios for reheating based on string creation at the end of inflation, may also be presented, if time allows. The advantage of our method is that the solutions are valid directly in four target-space-time dimensions, as a result of the non trivial dilaton configurations. Whether the model is phenomenologically realistic, with respect to its particle physics aspects, remains an open issue.

Name: **Ms Suchita Kulkarni**
Institution: Bonn University

Title: Investigating abundances of semi-relativistic dark matter

Abstract:
The analytical solution of the Boltzmann equation for the relativistic and non-relativistic regime is known. However, there is no general solution for the treatment of semi-relativistic candidates. We propose a new ansatz for thermally averaging the cross section for these particles and derive semi-analytic results for calculating their relic density. The approximate relic density of massive hypothetical particles annihilating either via S or P wave cross sections is found to be in good agreement with exact calculations. Majorana and Dirac type neutrinos have been considered as dark matter candidates for a long time. Such particles are among the examples where our formalism is applicable. In the current work the possibilities of having them as a dark matter candidate in semi-relativistic regime with abundance compatible with current bounds, or as a source of entropy production, have been considered.

Name: **Dr Massimiliano Lattanzi**
Institution: University of Oxford

Title: Constraining Dark Matter Models Through 21cm Observations

Abstract: Different dark matter candidates can inject energy into the intergalactic medium through their decay and/or annihilation products. This will affect the ionization and heating history of the Universe, leading to a distinct signature in the 21cm signal. Here I will discuss the observational signatures of different dark matter candidates, including and discuss the possibility of detecting this signal in upcoming experiments.

Name: **Ms Rose Lerner**
Institution: Lancaster University

Title: Transient Breakdown of Slow-roll and Homogeneity During Inflation: Inhomogeneous and Anisotropic Step Features

Abstract:
We consider a step feature in the inflaton potential in order to model a transient breakdown of both slow-roll and homogeneity. Isotropy may also be broken. Such space-dependent features may arise via tachyonic preheating in a second field or modulated fluctuations of a second field. We show that space-dependence induces mode coupling of the quantized inflaton field modes. Characteristic resonance features in the curvature perturbation power spectrum are generated at wavenumbers equal to integer multiples of the inhomogeneity wavenumber. In addition, the initial random phase of the modes generates random fluctuations of the power spectrum.

Name: **Ms Tina Lund**
Institution: Inst. of Physics and Astronomy, Aarhus University

Title: Strong Neutrino-Majoron interactions in Supernovae?

Abstract: The supernova explosion mechanism is still an unresolved puzzle. It is known that neutrinos comprise one piece in that puzzle, but not what their exact role is. We try to clarify the influence of neutrinos by looking at strong interactions betweeen neutrinos and a novel majoron-like particle.
Hitherto it has always been assumed that majorons would leave the supernova without interacting. Should neutrinos and majorons instead interact strongly it will have considerable influence on the possibility of depositing energy behind the shock front, and on the neutrino energy spectra that can be observed on Earth.

Name: **Ms Lotta Mether**
Institution: Helsinki Institute of Physics

Talk Title: Leptogenesis with susy flat directions

Abstract: I will review the problem of the gravitino bound in supersymmetric thermal leptogenesis with a hierarchical right-handed neutrino spectrum. I will discuss some effects the presence of supersymmetric flat directions can have on the scenario. In particular, how the flat directions can lead to non-perturbative production of neutrinos,

such that a sufficient amount of baryon asymmetry is generated, even when the gravitino bound is respected.

Name: **Mr Pedro Naranjo**
Institution: University of Patras

Title: Dark Matter and Yukawa Unification

Abstract: We study the implications of the WMAP dark matter constraints on Yukawa Unification in the presence of massive neutrinos. The large neutrino mixing indicated by the data modifies the predictions for the bottom quark mass, and enables Yukawa unification for regions of the SUSY parameter space that were previously disfavoured. This in turn increases the allowed parameter space for neutralino dark matter, particularly for areas with resonant enhancement of the neutralino relic density. We also find that the parameter space compatible with dark matter, in general predicts Lepton Flavour Violation that is very close to the current experimental bounds.

Name: **Mr Ioannis Ntalianis**
Institution: IFT-University of Warsaw

Title: Cosmological Implications of Supersymmetry breaking

Abstract: We discuss cosmological implications of supersymmetry breaking. In particular, we concentrate on the difficulty to accommodate very weakly, often only gravitationally, interacting fields present in scenarios of susy breaking.

Name: Dr **Sami Nurmi**
Institution: University of Helsinki

Title: Parametric Decay of the Curvaton

Abstract: We argue that the curvaton decay takes place most naturally by way of a broad parametric resonance. The mechanism is analogous to resonant inflaton decay but does not require any tuning of the curvaton coupling strength to other scalar fields. For low scale inflation and a correspondingly low mass scale for the curvaton, we speculate on observable consequences including the possibility of stochastic gravitational waves

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Name: Ms **Federica Palorini**
Institution: IPN Lyon

Title: The number density of a charged relic

Abstract: We consider scenarios in which a charged, long-lived scalar particle decouples from the primordial plasma in the Early Universe. In this context, we evaluate the number density at time of freeze-out in both cases of abelian and non-abelian interactions, with the inclusion of Sommerfeld effects. We then compare these number densities to the

exotic nuclei searches for stable relics and to the BBN bounds on unstable relics and draw conclusions for the cases of a stau or stop NLSP in supersymmetric models with a gravitino or axino LSP.

Name: Dr **Grigoris Panotopoulos**
Institution: ASC, LMU, Munich

Title: Cosmological Helium production and WIMP dark matter in modifications of gravity

Abstract: The primordial Big-Bang Nucleosynthesis (BBN) and WIMP dark matter are discussed in a certain class of modified gravitational theories, namely $f(R)$ gravity. We determine the conditions under which the theoretical predictions for cosmological Helium abundance and for the relic abundance of the WIMP dark matter are in agreement with the observations. Our results show that this class of gravitational models considered here is allowed to be only slightly different from Einstein's general relativity.

Name: Dr **Eun-Kyung Park**
Institution: Bonn University

Title: A catalogue of neutralino dark matter models with and without SUSY soft term universality

Abstract: We present a brief review of neutralino dark matter in supersymmetric models with soft term universality at the GUT scale and eight variations with non-universality. We remark on important features of each model with respect to searches at LHC Tevatron and ILC, and direct and indirect dark matter detection as well. Lastly, we perform a sort of global analysis of models with and without soft term universality.

Name: Ms **Aleksandra Piórkowska**
Institution: University of Silesia

Title: Gravitational lensing time delays as a tool for testing Lorentz Invariance Violation

Abstract: It is generally expected that quantum gravity theory will bring the picture of a space-time foam at short distances leading to Lorentz Invariance Violation (LIV) manifested e.g. by energy dependent modification of standard relativistic dispersion relation. One direction of research, pursued intensively is to measure energy dependent time of arrival delays in photons emitted by astrophysical sources located at cosmological distances. Some problems related to this technique are discussed. We also raise the issue how important, in the context of testing LIV theories, is our detailed knowledge of the cosmological model. Additional we propose a new test based on gravitational lensing. Monitoring time delays between images performed in different energy channels (e.g. optical - low energy and TeV photons) may reveal extra delays due to distorted dispersion relation typical in LIV theories - a test which is free from the systematics inherent in other settings.

Name: Ms **Vappu Reijonen**

Institution: Helsinki Institute of Physics

Title: On stars in f(R) gravity models

Abstract: TBA

Name: Mr **Sebastien Renaux-Petel**
Institution: APC

Title: Multi-field DBI inflation

Abstract: Originally, Dirac-Born-Infeld (DBI) inflation is a string-inspired inflation scenario where a probe D3-brane moves in the radial direction of a higher-dimensional warped throat. I will review this scenario, highlighting the difference with conventional inflation concerning the spectrum of perturbations and non-Gaussianities. I will then show how to take into account the angular motion of the brane in the extra-dimensions, which can have drastic consequences for observational quantities.

Name: **Signe Riemer-Sorensen**
Institution: Dark Cosmology Centre, Niels Bohr Institute
Title: Resolving the discrepancy between lensing and X-ray mass estimates of the complex galaxy cluster Abell 1689

Abstract: There is a long-standing discrepancy between galaxy cluster masses determined from X-ray and gravitational lensing observations of which Abell 1689 is a well studied example. Ealier X-ray analyses have inferred the very circular surface brightness of Abell 1689 as the cluster being spherically symmetric and in hydrostatic equilibrium. A new 150 ks Chandra X-ray exposure allows us to identify substructure in the cluster and exclude this substructure from the mass determination and thereby eliminate the mass discrepancy between the different methods. A hardness ratio map analysis reveals a regular and symmetric appearing main clump with a cool core plus some substructure in the North Eastern part of the cluster. We compare the results to gravitational lensing mass modelling, especially we discuss them in the light of a new weak gravitational lensing study based on a Hubble Space Telescope mosaic. The lensing results supports the interpretation of Abell 1689 being composed of a main clump, which is possibly a virialized cluster, plus some substructure. Comparing X-ray and lensing mass profiles of the regular main part only, eliminates the discrepancy between the two methods and the obtained mass profiles are consistent over the full range where the mass can be reconstructed from X-rays.

Name: Dr **Gerasimos Rigopoulos**
Institution: Helsinki Institute of Physics

Title: On the divergences of inflationary superhorizon perturbations.

Abstract: I will discuss the infrared divergences that appear to plague cosmological perturbation theory. Within the stochastic framework they are regulated by eternal inflation. Using the ΔN formalism to one loop, one can show that the infrared

modes can be absorbed into additive constants and the coefficients of the diagrammatic expansion for the connected parts of two and three-point functions of the curvature perturbation. Furthermore, it is possible to define observables that are invariant under a change of IR cutoff.

Name: Mr **Francesco Riva**
Institution: University of Oxford (and CERN)

Title: Curvature Perturbations from SUSY Flat Directions

Abstract: We show that a contribution to the total curvature perturbation may be due to the presence of flat directions in supersymmetric models. It is generated at the first oscillation of the flat direction condensate when the latter relaxes to the minimum of its potential after the end of inflation. We also point out that, if the contribution to the total curvature perturbation from supersymmetric flat direction is the dominant one, then a significant level of non-Gaussianity in the cosmological perturbation is also naturally expected.

Name: Mr **Joao Rosa**
Institution: University of Oxford

Title: Resonant Particle Production in Branonium

Abstract: We study the mechanism of particle production in the world-volume of a probe anti D6-brane (or D6 with SUSY breaking) moving in the background created by a fixed stack of $D6$-branes. We show that this may occur in a regime of parametric resonance when the probe's motion is non-relativistic and it moves at large distances from the source branes in low eccentricity orbits. This leads to an exponential growth of the particle number in the probe's world-volume and constitutes an effective mechanism for producing very massive particles. We also analyze the evolution of this system in an expanding universe and how this affects the development of the parametric resonance. We discuss the effects of transverse space compactification on the probe's motion, showing that it leads to the creation of angular momentum in a similar way to the Affleck-Dine mechanism for baryogenesis. Finally, we describe possible final states of the system and their potential relevance to cosmology.

Name: Dr **Narendra Sahu**
Institution: Lancaster University

Title: keV warm dark matter via the supersymmetric Higgs Portal

Abstract: Warm dark matter (WDM) may resolve the conflict between observed galaxy halos and singular halos produced in cold dark matter (CDM) simulations. In this letter we present an extension of MSSM to include WDM by adding a gauge singlet fermion, c, with a portal-like coupling to the MSSM Higgs doublets. In the case where Mc is mainly due to electroweak symmetry breaking, the c mass is completely determined by its relic density and the reheating temperature, TR. For 102 GeV <~TR<~105 GeV, the range allowed by c production via thermal Higgs scattering, the c mass is in the range 0.3-4

keV. Remarkably, this is the range required for WDM. The primordial phase-space density, Q, can directly account for that observed in dwarf spheroidal galaxies, Q ≈ 5×106, when the reheating temperature is in the range TR ≈ 10−100 TeV, in which case Mc ≈ 0.45 keV. The free-streaming length is in the range 0.3-4 Mpc, which can be small enough to alleviate the overproduction of galaxy substructure.

Name: Dr **Arman Shafieloo**
Institution: University of Oxford

Talk Title: Two New Diagnostics of Dark Energy

Abstract: We introduce two new diagnostics of dark energy (DE). The first, "Om", is a combination of the Hubble parameter and the cosmological redshift and provides a null test of dark energy being a cosmological constant. Namely, if the value of Om(z) is the same at different redshifts, then DE is exactly cosmological constant. The slope of Om(z) can differentiate between different models of dark energy even if the value of the matter density is not accurately known. For DE with an unevolving equation of state, a positive slope of Om(z) is suggestive of Phantom (w < -1) while a negative slope indicates Quintessence (w > -1). The second diagnostic, "acceleration probe" (q-probe), is the mean value of the deceleration parameter over a small redshift range. It can be used to determine the cosmological redshift at which the universe began to accelerate, again without reference to the current value of the matter density. We apply the "Om" and "q-probe" diagnostics to the Union data set of type Ia supernovae.

Name: Mr **Wessel Valkenburg**
Institution: LAPTH

Title: A prior dependence of the tensor-to-scalar ratio

Abstract: Different choices of prior probability can be made for a Bayesian estimation of the tensor-to-scalar ratio from inflation. I will compare two different priors, argue why both are equally well motivated, and show the effect of a change of prior on the posterior probability of the tensor-to-scalar ratio and the scale of inflation.

Name: Dr **Katarzyna Zuleta Estrugo**
Institution: University of Ioannina

Title: Field-theoretical branes and their effective actions

Abstract: We consider a generic five-dimensional domain wall model with two scalar fields as a testing ground to study the interactions of the matter localized on the brane with the brane excitations. Deriving the four-dimensional low energy effective action, we confirm the importance of the contributions of the heavy modes. The connection of the obtained action with the Nambu-Goto action is also discussed.
