Tehran Meeting on Cosmology

5 -10 August 2017 (14 -19 Mordad 1396)

IPM, Tehran, Iran

Title of Poster Presentation

	First Name	Last Name	Institute	Status
1	Mohammad	Ansari	Sharif University of technology	GraduStu
	Title: Late time Sky as a probe of steps and Oscillations in Primordial Universe **Abstract:** The standard model of cosmology with nearly Gaussian, isotropic, scale invariant and adiabatic initial con- ditions describe the cosmological observations. However, the study of any deviation from the mentioned conditions will open up a new horizon to the physics of early universe. In this work we study the effect of the oscillatory and step in potential inflationary models in late time large scale structure observations. Mainly we study the matter power spectrum, number density of the structures, the halo bias an the bulk flow in these mod- els. We assert that inflationary models with step functions which deviates from the standard model in small scales l ≤ 1Mpc can be constrained by Large scale data as well. We also discuss the effectiveness of CMB lensing as a probe of deviation from standard model.			
2	Saeed	AnsariFard	Shahid Beheshti University	PhDStu
	Title: New Estimation of Observational Cluster Mass in accordance with mass bias inferred from CMB primary **Abstract:** There are some approximation in mass estimation process of clusters by X ray or SZ observations causes the deduced mass being different than real mass. This difference have been coded by bias parameter. Value determination of bias parameter have recently been faced with challenge. We reproduce the hydrostatic equilibrium relation by considering the full Einstein Equation as $G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu}$ in a Cluster. this add some modification to Y-M scaling relation. We have applied this modification to bias parameter as a result it became redshift dependent hence it could disappear the tension between CMB primary cosmological result and clus- ter number count.			
3	Mohammad	Arab	Bu-Ali Sina university	PhDStu
	Title: Non Singular Matter Bounce Scenario With a Small Negative Running of The Spectral Index **Abstract:** In this work we propose a running vacuum model in the non singular matter bounce scenario in which Lambda has an expansion of H (Hubble parameter) and its derivative. we obtained a small negative value for running can be exist by considering an expansion of Lambda grater than H^2. By estimating a set of parameters in this model, we obtain spectral index, its Running and tensor to scalar ratio (r) that demonstrate the capability of satisfying current observations.			
4	Aghileh S	Ebrahimi	University of Kashan in collaboration with Shahid Beheshti University	PhDStu
	Title: Clustering of Cold Dynamical Dark Energy Models **Abstract:** The nature of dark energy can be investigated not only by equation of state but also through clustering and sound speed. In this research, we examine clustering of some dynamical dark energy models namely, power-law (PL), Chavelier-Polarski-Linder (CPL) and Feng-Shen-Li (FSL). We will go beyond zero-order and Free parameter of models constraints by using current available data including Planck DR2, Baryonic Acoustic Oscillation (BAO) and Supernovae type Ia (SNIa) observation and Hubble space telescope (HST). We investigate that PL as early dark energy has different behavior rather than semi-LCDM models such as rapid potential changes, higher matter density contrast due to crossing LCDM equation of state and matter behavior at early universe. We quantify the importance of uncoupled dark energy clustering, PL exhibits strong clustering with $\delta_{P\,L} > 0$ and semi-LCDM models produce void of dark energy with powerless amplitude around 10^{-12}. In the linear regime, density contrast, growth rate index f(σ_8) and gravitational potential computed. Furthermore, temperature anisotropy and matter power spectrum by modification of CAMB for dynamical models obtained and ISW effect. PL shows more ISW effect, more value for matter power spectrum at large scale around k=0.01.Tension between HST and CMB for H_0 disappears for all models.			
5	Neda	Heidari	Bu-Ali Sina University	GraduStu
	Title: Spherical collapse model and cluster number counts in power-law f(T) gravity **Abstract:** We study the spherical collapse model in the framework of spatially flat power law $f\ T = \alpha - T\ b$ gravity model. We find that the linear and non-linear growth of spherical overdensities of this particularf (T) model are affected by the power-law parameter b. Finally, we compute the predicted number counts of virialized haloes in order to distinguish the current f (T) model from the expectations of the concordance ∧ cosmology. Specifically, the present analysis suggests that the f (T) gravity model with positive (negative) b predicts more (less) virialized objects with respect to those of ∧ cold dark matter.			

Tehran Meeting on Cosmology

5 -10 August 2017 (14 -19 Mordad 1396)

IPM, Tehran, Iran

Title of Poster Presentation

	First Name	Last Name	Institute	Status
6	**Matin**	**Honardoost**	**Shahid Beheshti University**	**PhDStu**
	Title: Symmetron with a non-minimal kinetic term **Abstract:** We investigate the compatibility of Symmetrons with dark energy by introducing a non-minimal kinetic term associated with the Symmetron. In this new model, the effect of the friction term appearing in the equation of motion of the Symmetron field becomes more pronounced due to the non-minimal kinetic term appearing in the action and, under specific conditions after symmetry breaking, the universe experiences an accelerating phase which, in spite of the large effective mass of the scalar field, lasts as long as the Hubble time H_0.			
7	**Seyyed Masoud**	**Hoseyni**	**Khayyam University**	**PhDStu**
	Khayyam University, Department of Astrophysics and Cosmology, Seyyed Masoud Hoseyni, Olya Layeghi, Dr Sepehr Arbabi Bidgoli The Cosmic Microwave Background (CMB) Cold Spot located in southern celestial hemisphere, seen in microwave from WMAP and Plank satellite. Analyzing data show this region is large and approximately 70μk colder than the average CMB temperature. Typically, CMB distribution of temperature fluctuations are completely Gaussian and the largest fluctuations of the primordial CMB temperature occur on angular scale of about 1°. Thus a cold region as large as the Cold Spot appears very unlikely, given accepted theoretical methods. So, that may be a signal of non-Gaussian primordial fluctuations. To explain this anomaly, we study the cosmological imprints of pre-inflationary particles (PIPs). In some inflationary models, pre-inflationary particles can generate Spherically Symmetric Cosmic Defect (SSCD). We show that the main effect lies in the low-l modes. We also calculate the CMB signal to noise ratio (S/N) as a function of the location of the SSCD and find that the SW-ISW competition, could help in identifying the SSCD's imprints in the CMB. Next we show that a SSCD located at a particular distance from us provides a possible explanation to the Cold Spot. According to Planck results, we plot the diagram of $\varphi - r$ (Gravitational potential – distance) which is very close to data of WMAP results. In Planck 2015 results. XVI Isotropy and statistics of the Planck, the existence of cold spot is confirmed and needs to study more by satellites with higher resolution.			
8	**Elahe**	**Karimkhani**	**Bu-Ali sina Hamedan**	**PhDStu**
	TBA			
9	**Shirin**	**Khodabakhshi**	**University of Tehran**	**PhDStu**
	Title: The Possible Role of Godel and Casimir in the Cosmological Inhomogenities **Abstract:** Computing the Casimir force between two parallel plates in the Gödel universe for a scalar field at finite temperature shows when the plates' separation is comparable with the scale given by the rotation of the space-time, the force becomes repulsive and then approaches zero. Since it has been shown previously that the universe may experience a Gödel phase for a small period of time, the induced inhomogeneities from the Casimir force are investigated.			
10	**Olya**	**Layeghi**	**Khayyam University**	**PhDStu**
	Khayyam University, Department of Astrophysics and Cosmology, Seyyed Masoud Hoseyni, Olya Layeghi, Dr Sepehr Arbabi Bidgoli The Cosmic Microwave Background (CMB) Cold Spot located in southern celestial hemisphere, seen in microwave from WMAP and Plank satellite. Analyzing data show this region is large and approximately 70μk colder than the average CMB temperature. Typically, CMB distribution of temperature fluctuations are completely Gaussian and the largest fluctuations of the primordial CMB temperature occur on angular scale of about 1°. Thus a cold region as large as the Cold Spot appears very unlikely, given accepted theoretical methods. So, that may be a signal of non-Gaussian primordial fluctuations. To explain this anomaly, we study the cosmological imprints of pre-inflationary particles (PIPs). In some inflationary models, pre-inflationary particles can generate Spherically Symmetric Cosmic Defect (SSCD). We show that the main effect lies in the low-l modes. We also calculate the CMB signal to noise ratio (S/N) as a function of the location of the SSCD and find that the SW-ISW competition, could help in identifying the SSCD's imprints in the CMB. Next we show that a SSCD located at a particular distance from us provides a possible explanation to the Cold Spot. According to Planck results, we plot the diagram of $\varphi - r$ (Gravitational potential – distance) which is very close to data of WMAP results. In Planck 2015 results. XVI Isotropy and statistics of the Planck, the existence of cold spot is confirmed and needs to study more by satellites with higher resolution.			

Tehran Meeting on Cosmology

5 -10 August 2017 (14 -19 Mordad 1396)

IPM, Tehran, Iran

Title of Poster Presentation

	First Name	Last Name	Institute	Status
11	Tayebeh	Mirzaei Rezaei	Islamic Azad University, Ayatollah Amoli Branch	PhDStu
	Title : The Stability of intraction Ho-Savky gravity with generalized Chaplaygn gas (GCG) model Mirzaei Rezaei, Tayebeh 1; Alireza, Amani1 1 Department of Physics, Ayatollah Amoli Branch, Islamic Azad University, Amol, Mazandaran, Iran **Abstract:** In this paper, we study the intracting model between Hu-Sawicki gravity and generalized Chaplaygn gas (GCG). The continuity equations have been separately written by componrnts of dark energy and generalized Chaplaygn gas. By using Friedmann equations, we find the energy density, pressure and EoS parameter of dark energy in terms of free parameters of Chaplaygn gas. Finally, we plot the graphs of cosmological components in terms of redshift, and sound speed parameter shows us a stability in late universe.			
12	Zahra	Molavi	Bu-Ali Sina University	PhDStu
	Title: Structure Formation in MGB(Modified Gauss Bonnet) Dark energy **Abstract:** We've studied the consistency of MGB-DE as a dynamical DE model with the observations. Data analyzing methods Abstract: are used to study the expansion history and evolution of structures in presence of MGB dark energy. This work is based on recent observational data sets for SNIa,(BAO) , Hubble parameter, Planck and WMAP data for CMB and structure formation data for fsigma ٨as well. We obtained the best fit parameter in different joint analysis of these data sets .Our results show a good compatibility between MGB model and observations.			
13	Behrang	Mostaghel	Shahid Beheshty University	PhDStu
	Title: Viscous dark energy: A proposal to reduce the tension between Planck and LSS **Abstract**: We investigate the tension between Planck and Red-Shift Space Distortion (RSD) data. RSD datasets indicate that the intensity of gravitation is less than that of inferred from Planck data. In this paper, we will study the fluctuations of matter in the viscous dark energy framework. Our results demonstrate that at the first order perturbation, this model can reduce the tension in $f\sigma_8$.			
14	Zahra	Davari	Bu-Ali Sina University	
	رشد اختلالات در کیهانشناسی انرژی تاریک ایجگرافیک داوری ، زهرا؛ ملک جانی محمد ؛ مهرابی، احمد ؛ *گروه فیزیک، دانشگاه بوعلی سینا ، همدان* **چکیده:** در این مقاله در ابتدا بررسی جامعی از مدل انرژی تاریک ایجگرافیک در سطح زمینه و اختلالات ارائه داده می‌شود و سپس رشد اختلالات ماده را در مدل‌های انرژی تاریک ایجگرافیک همگن و خوشه‌بندی شده مورد بررسی قرار می‌گیرد و با انجام تحلیل درست نمایی با کمک مجموعه کاملی از داده‌های هندسی و نرخ رشد با و روش MCMC پارامترهای کیهانی در این مدلها تعیین میشود. در نهایت محدوده اعتبار مدل‌های انرژی تاریک ایجگرافیک در سطح اختلالات مورد ارزیابی قرار می‌گیرد.			
15	Fateme	Rahim Monfared	Sharif University of Technology	GraduStu
	Title: The cross-correlation of Rees-Sciama and Ostriker-Vishniac effects, as a prediction of LCDM model for large scale structures **Abstract**: Secondary Anisotropies carry precious information about the intervening structures. As observations get more and more precise, it becomes more meaningful to investigate the higher order effects (in sense of large scale structure perturbation theory) of structures on CMB temperature anisotropy map. Here we consider two different effects, both of which contribute to CMB anisotropies in second order. They are the Rees-Sciama (R-S) effect and the Ostriker-Vishniac (O-V) effect. O-V effect shares the multiplication of density contrast by peculiar velocity with R-S effect as a variable but through a totally different physics. the fact that both effects happen roughly in the same spatial scale in the universe, persuades us to believe more to the validity of this calculation. Here we calculate the prediction of LCDM model for the cross-correlation of R-S and O-V effects. As the future observations provide accurate data for us we can impose more restrictions on LCDM variables.			

Tehran Meeting on Cosmology

5 -10 August 2017 (14 -19 Mordad 1396)

IPM, Tehran, Iran

Title of Poster Presentation

	First Name	Last Name	Institute	Status
16	Mehraneh	Tirandari	University of Kurdistan	PhDStu
	Title: Hamilton-Jacobi formalism to warm anisotropic inflation **Abstract:** Warm inflation in the framework of locally rotationally symmetric Bianchi type I universe model using the Hamilton-Jacobi formalism is being considered. The model is investigated in strong dissipative regime in the presence and absence of viscosity. The situation is studied in detail for different typical examples for each case. It is shown that the model could stand in acceptable range of observational data. However, it is proved that warm viscous anisotropic inflation with constant dissipative regime could not present a proper explanation of inflation and there is a clear conflict with data. In the case where dissipation and bulk viscous pressure coefficients are considered to be variable, the perturbation parameters is compatible with Planck data.			
17	Aref	Yazdani	University of Mazandaran	Researcher
	Title: Stable Micro Black Hole Production in a Fusion Nuclear Explosion by Modeling from the LHC			
18	Ebrahim	Yusofi	Islamic Azad University	Faculty
	عنوان پوستر: مدهای اولیه ی غیر-دسیته و کیهان شناسی تورمی **Title: Non-deSitter Initial Modes and Inflationary Cosmology** چکیده: داده های اخیر کاوشگر پلانک، فضا-زمانی تقریبا دسیته، طیف توانی تقریبا مقیاس ناوردا با توزیع غیرگوسینی نزدیک به صفر را نشان می دهد. در این کار تحقیقاتی با استفاده از بسط مجانبی تابع هنکل در زمان های بسیار اولیه، مدهای غیر-دسیته وابسته به اندیس تابع هنکل را معرفی می کنیم. با استفاده از مدهای غیر-دسیته می توانیم به نتایج تعمیم یافته ای برای خلق ذرات، تصحیحات فراپلانکی و تورم با جفت شدگی غیر کمینه دست یابیم که این تعمیم ها در حد فضای مد بانچ-دیویس به جواب های مرسوم قبلی منتهی می شوند. همچنین با استفاده از داده های پلانک ۲۰۱۵ قیدهای لازم روی این مدهای مجانبی را مشخص می کنیم.			