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H-index from Google scholar: 21

● Education and Qualifications:

- 2021 till now: Professor at Shahid Beheshti University, Tehran, IRAN.
- 2013 till 2021: Associate Professor at Shahid Beheshti University, Tehran, IRAN.
- 2014 till 2021: Resident researcher at school of Physics - Institute for research in fundamental sciences (IPM).
- 2006-2013: Resident researcher at school of astronomy - Institute for research in fundamental sciences (IPM).
- 2007-2013: Assistant Professor at Shahid Beheshti University, Tehran, IRAN.
- 2002-2006: PhD of Physics from Sharif University of Technology Supervisor: Prof. Rahimi Tabar & Prof. Rahvar, PhD Thesis: Statistical Analysis of Cosmic Microwave Background Radiation.
- 2001-2002: M.Sc from Sharif University of Technology. M.Sc Thesis: Investigation and comparison of kinetics and mechanism of IPA alcohol decomposition on V2O5 and CuO semiconductors thin film, Supervisor: Prof. A. Z. Moshfegh
- 1997-2001: B.Sc from University of Shiraz. B.Sc Thesis: An Introduction to Green's Function and it's Applications. Supervisor: Prof. Azizollah Azizi
- 1993-1997: High-School from Molla-Sadra school, Shiraz-Iran.

● Awards and Scholarships

- Junior Associate: I have received Junior Associate of Abdus Salam, International Center for Theoretical Physics (ICTP), Italy, from 1 January 2009 until 31 December 2016.
- Funds for young Assistant professor: I have received a research grant award from elite national foundation (Bonyad Melli Nokhbegan) for young Assistant professor, 2007.
- Innovation grant award: I have received an innovation
- 9th Khwarizmi youth award: Selected as second grade in fundamental research, 2007. This competition is one of most important national scientific competition.
- Selected as a distinguished researcher at my University, 2018 .
- Selected as a distinguished teacher at my University, 2022 .
- Selected as a distinguished researcher at my University, 2011 .
- Selected as a first rank in the PhD program at Sharif University, 2006.
- Scholarship award from Sharif University of Technology for two years, 2004-2006.

● Conference management (most recent)

- Tehran meeting on Cosmology, an international activity, August 2017
<http://physics.ipm.ac.ir/conferences/tmc/index.jsp>
- 3th national conference of computational physics, 2018
<http://www.psi.ir/farsi.asp?page=icp96>
- First national work shop on Machine learning in Physics, 2018
<http://www.psi.ir/farsi.asp?page=icp96>
- 2nd conference on microfluidics, 2018.
<http://microfluidics-conference.ir/Pages/Default.aspx>
- First international conference of Data Sciences, 2017
<http://cs.ipm.ac.ir/ds2017/>
- National physics conference, 2017
<http://www.psi.ir/farsi.asp?page=physics96>

● Field of Researches

- Cosmological stochastic fields and Large scale structures
- Gravitational wave
- Critical phenomena and Phase transitions
- Time series analysis
- Topological and geometrical based analysis
- Machine Learning
- Complex systems and statistical physics
- CMB Physics
- Data Science and Big data

• List of Publications

2005

- 1- **S.M.S. Movahed**, M. Saadat and M. Rahimi Tabar, “*The $O(n)$ Model in the n to 0 Limit (self-avoiding-walk) and Logarithmic Conformal Field Theory*”, Nuclear Physics B, 707, (2005), 405-420.

2006

- 2- **S.M.S. Movahed**, A. Bahraminasab, H. Rezazadeh, A. A. Masoudi "Level crossing Analysis of Burgers equation in $d+1$ dimensions", J. Phys. A: Math. Gen. 39 (2006) 3903–3909.
- 3- **S.M.S. Movahed**, G. R. Jafari, F. Ghasemi, S. Rahvar and M. Rahimi Tabar, "Multifractal detrended fluctuation analysis of Sunspot time series", J. Stat. Mech. (2006) P02003.
- 4- G. R. Jafari, **S.M.S. Movahed**, S. M. Fazeli, M. Rahimi Tabar and A. F. Masoudi, "Level Crossing Analysis of the Stock Markets", J. Stat. Mech (2006), P06008.
- 5- A. Bahraminasab, **S.M.S. Movahed**, S. D. Nassiri, A. A. Masoudi, "Exact Analysis of Level-Crossing Statistics for $(d+1)$ - Dimensional Fluctuating Surfaces", Journal of Statistical Physics, Vol. 124, No. 6, (2006).
- 6- F. Ghasemi, A. Bahraminasab, **S.M.S. Movahed**, S. Rahvar, K. R. Sreenivasan and M. Rahimi Tabar, “Characteristic Angular Scales in Cosmic Microwave Background Radiation ”, J. Stat. Mech. (2006) P11008.
- 7- **S.M.S. Movahed** and Sohrab Rahvar, "Observational Constraint on a Variable Dark Energy Model", PRD 73, 083518 (2006).
- 8- Sepehr Arbabi Bidgoli, **S.M.S. Movahed** and Sohrab Rahvar, " Structure Formation in a variable Dark Energy Models", Int. J. Modern Phys. D. Vol. 19, No. 10, 1-18 (2006).

2007

- 9- G. R. Jafari, **S.M.S. Movahed**, P. Noroozadeh, A. Bahraminasab, Muhammad Sahimi, F. Ghasemi, M. Reza Rahimi Tabar, " Uncertainty in the Fluctuations of the Price of Stocks ” , International Journal of Modern Physics C Vol. 18, No. 11, 1689-1697 (2007).
- 10- Sohrab Rahvar and **S.M.S. Movahed**, "Power-law Parameterized Quintessence Model", PRD 75, 023512 (2007).
- 11- **S.M.S. Movahed** and Sima Ghassemi, " Is Thick Brane Model Consistent with the Recent Observations?", PRD 76, 084037 (2007).
- 12- **S.M.S. Movahed**, Shant Baghran, Sohrab Rahvar, "Consistency of $f(R)=\sqrt{R^2-R_0^2}$ Gravity with the Cosmological Observations in Palatini Formalism " ,PRD 76, 044008 (2007).

2008

- 13- S. Mirabotalebi, S. Jalalzadeh, **S.M.S. Movahed** and H. R. Sepangi, "*Weyl-Dirac theory predictions on galactic scales*", Monthly Notices of the Royal Astronomical Society, Volume 385, Issue 2, pp.986-994, (2008),
- 14- **S.M.S. Movahed** and E. Hermanis, "*Fractal Analysis of River Flow Fluctuations*", Journal of Physica A: Statistical Mechanics and its Applications, 387, 915 (2008),
- 15- **S.M.S. Movahed**, Ahmad Sheykhi, "*Observational constraints on the braneworld model with brane-bulk energy exchange*" ,Mon. Not. R. Astron. Soc. 388, 197 (2008).
- 2009**
- 16- **S.M.S. Movahed**, Marzieh Farhang, Sohrab Rahvar, "*Observational Constraints with Recent Data on the DGP Modified Gravity*", International Journal of Theoretical Physics, 48, 1203-1230, (2009).
- 17- S. Kimiagar, **S.M.S. Movahed**, S. Khorram, S. Sobhanian, and M. Reza Rahimi Tabar, "*Fractal Analysis of Discharge Current Fluctuations*", JSTAT P03020 (2009).
- 18- Shant Baghram, **S.M.S. Movahed**, Sohrab Rahvar, "*Observational tests of a two parameter power-law class modified gravity in Palatini formalism*", PRD, 80, 064003 (2009).
- 19- F. Shayeganfar, S. Jabbari-Farouji, **S.M.S. Movahed**, G. R. Jafari, and M. Reza Rahimi Tabar "*Multifractal Analysis of Light Scattering Intensity Fluctuations*", PRE 80, 061126 (2009).
- 2010**
- 20- S. Hosseinabadi, A.A. Masoudi and **S.M.S. Movahed**, "Solid on Solid model for surface growth in 2+1 dimensions", Physica B: Condensed Matter, Volume 405, Issue 8, 15 April (2010), Pages 2072-2077.
- 21- Razieh Emami, Hassan Firouzjahi and **S.M.S. Movahed**, "*Inflation from Charged Scalar and Primordial Magnetic Fields?*", PRD **81**, 083526 (2010).
- 22- F. Shayeganfar, S. Jabbari-Farouji, **S.M.S. Movahed**, G. R. Jafari and M. Reza Rahimi Tabar, "*Stochastic qualifier of gel and glass transition in laponite suspension*", PRE, 81, 061404 (2010).
- 23- S. Hajian and **S.M.S. Movahed**, "*Detrended Cross-Correlation Analysis of Sunspot and River Flow Fluctuations*", Physica A 389 (2010) 4942 (2010).
- 2011**
- 24- **S.M.S. Movahed** and Shahram Khosravi, "*Level crossing Analysis of Cosmic Microwave Background Radiation: A method for detecting cosmic strings*", JCAP 1103:012, (2011).
- 25- Razieh Emami, Hassan Firouzjahi, **S.M.S. Movahed** and Moslem Zarei, "*Anisotropic Inflation from charged scalar fields*", JCAP 02005E, (2011).
- 26- S. Kimiagar, **S.M.S. Movahed**, S. Khorram and M. Reza Rahimi Tabar, "*Markov Properties of Electrical Discharge Current Fluctuations in Plasma*", J Stat Phys, 143: 148-167 (2011).
- 27- **S.M.S. Movahed**, F. Ghasemi, Sohrab Rahvar and M. Rahimi Tabar, "*Long-range correlation in cosmic microwave background radiation*", PHYSICAL REVIEW E 84, 021103 (2011).
- 28- M. Vahabi, G.R. Jafari and **S.M.S. Movahed**, "*Analysis of fractional Gaussian noises using level crossing method*", J. Stat. Mech. P11021 (2011).
- 2012**
- 29- A. Sheykhi, **S.M.S. Movahed**, "*Interacting Ghost Dark Energy in Non-Flat Universe*", Gen. Relativ Gravity, 44:449-465 (2012).
- 30- A. Sheykhi, **S.M.S. Movahed**, E. Ebrahimi, "*Tachyon Reconstruction of Interacting Ghost Dark Energy*", Astrophys Space Sci (2012) 339:93-99 (2012).
- 31- T. Azizi, **S.M.S. Movahed**, Kouros Nozari, "*Observational Constraints on the Normal Branch of a Warped DGP Cosmology*", New Astronomy 17, 424-432 (2012).
- 32- S. Hosseinabadi, M. A. Rajabpour, **S.M.S. Movahed**, S. M. Vaez, "*Geometrical exponents*

of contour loops on synthetic multifractal rough surfaces: multiplicative hierarchical cascade p-model", PHYSICAL REVIEW E 85, 031113 (2012).

2013

33- S.M.S. Movahed , B. Javanmardi and Ravi K. Sheth, "*Peak-peak correlations in the cosmic background radiation from cosmic strings*", MNRAS Volume 434, Issue 4 p. 3597-3605 (2013).

34- F. Shayeganfar, S.M.S. Movahed, G. R. Jafari, "*Discrimination of Sol and Gel phases in an aging clay suspension*", Chemical Physics 423, 167–172 (2013).

2014

35- S Hosseinabadi, S.M.S. Movahed , "*Dynamical and geometrical exponents of self-affine rough surfaces on regular and random lattices*", J. Stat. Mech. P12023 (2014).

2015

36- Z. Koohi Lai, S. Vasheghani Farahani, S.M.S. Movahed, G.R. Jafari, "*Coupled uncertainty provided by a multifractal random walker*", Physics Letters A, 379, 2284-2290 (2015).

37- Samira Emadi, Davar Khalili, S.M.S. Movahed, "*Characteristics and multifractal properties of daily streamflow in the Karkheh watershed, western Iran*", Iranian Journal of Science and Technology Transactions of Civil Engineering, (2015).

2016

38- Nasim Bazazzadeh, Seyed Majid Mohseni, Amin Khavasi, Mohammad Ismail Zibaii and, S.M.S. Movahed, Gholam Reza Jafari, "*Dynamics of Magnetic Nano-Flake Vortices in Newtonian Fluids*", Journal of Magnetism and Magnetic Materials 419 (2016) 547–552.

2017

39- Paulo Ferreira, Andreia Dionísio and S.M.S. Movahed. "*Stock market co-movements: Nonlinear approach for 48 countries*", Physica A 486 (2017) 730–750.

40- E. Ebrahimi, H. Golchin, A. Mehrabi, S. M. S. Movahed, "*Generalized Ghost Dark Energy with Non-Linear Interaction*", International Journal of Modern Physics D, Vol. 26 (2017) 1750124.

41- M. Jannesar, T. Jamali, A. Sadeghi, S. M. S. Movahed, G. Fesler, E. Meyer, B. Khoshnevisan, and G. R. Jafari, "*Multiscaling behavior of atomic-scale friction*", PHYSICAL REVIEW E 95, 062802 (2017).

42- M. Arshadi Pirlar, S.M.S. Movahed, D. Razzaghi, R. Karimzadeh, "*Crossing statistics of scattered Laser Light through Nanofluid*", Journal of the Optical Society of America A, Vol. 34, No. 8 (2017). arXiv:1705.03542

43- Behrang Mostaghel, Hossein Moshafi, S.M.S. Movahed, "*Non-minimal Derivative Coupling Scalar Field and Bulk Viscous Dark Energy*", Eur. Phys. J. C (2017) 77:541.

44- M. Ghasemi Nezhadhighi, S.M.S. Movahed, T. Yasserli and S. M. Vaez Allaei, "*Crossing Statistics of Anisotropic Stochastic Surface*", JOURNAL OF APPLIED PHYSICS 122, (2017).

45- Jafari, G., Farahani, S. V., Lai, Z. K., & S.M.S. Movahed. (2017). Multi-fractal Random Walk and Its Application in Petro-physical Quantities. Fractals: Concepts and Applications in Geosciences, 272.

46- Mozaffarilegha, M., & S.M.S. Movahed. (2017). Multifractal Analysis of Auditory Brainstem Responses to Spoken Syllable/da. Iranian Journal of Biomedical Engineering, 11(3), 255-264.

2018

47- Vafaei Sadr, A., S. M. S. Movahed, M. Farhang, C. Ringeval, and F. R. Bouchet. "A Multiscale pipeline for the search of string-induced CMB anisotropies." Monthly Notices of the Royal Astronomical Society 475, no. 1 (2018): 1010-1022.

- 48- Iman Hajzadeh, Seyed Majid Mohseni, **S. M. S. Movahed**, G. R. Jafari, “*Spin Hall effect originated from fractal surface*”, Journal of Physics: Condensed Matter, 2018.
- 49- B. Mostaghel, H. Moshafi and **S. M. S. Movahed**, “*The Integrated Sachs-Wolfe Effect in the Bulk Viscous Dark Energy Model*”, Monthly Notices of the Royal Astronomical Society, Volume 481, Issue 2, 1 December 2018, 2018
- 50- I. Eghdami, H. Panahi, **S.M. Sadegh Movahed**, "Multifractal Analysis of Pulsar Timing Residuals: Assessment of Gravitational Waves Detection", The Astrophysical Journal, Volume 864, Number 2, 2018, arXiv:1704.08599
- 51- R. Shidpour and **S.M. Sadegh Movahed**, "*Identification of Defective Two Dimensional Semiconductors by Multifractal Analysis: The Single-layer MoS_2 Case Study*", Accepted in Journal of Physica A, 2018, arXiv:1810.05817
- 52- A. Vafaei Sadr, M. Farhang, **S. M. S. Movahed**, B. Bassett, M. Kunz, "*Cosmic String Detection with Tree-Based Machine Learning* ", Monthly Notices of the Royal Astronomical Society 478.1 (2018): 1132-1140, arXiv:1801.04140
- 53- SADEGHI, Seyed Haidreza, Somayeh KAZEMI KIA, Zeinab HAZBAVI, Mahdi ERFANIAN, and **S. M. S. Movahed**. "A BLUEPRINT FOR ELEMENTARY REPRESENTATIVE WATERSHED SPECIFICATION." AGROFOR 3, no. 2 (2018).
- 2019**
- 54- Marjan Mozaffarilegha, **S. M. S. Movahed**, “*Long-range temporal correlation in Auditory Brainstem Responses to Spoken Syllable /da/*”, Scientific Reports, volume 9, Article number: 1751 (2019).
- 55- Seyed Hamidreza Sadeghi, Somayeh Kazemi Kia, Mahdi Erfanian and **S. M. S. Movahed**, "*Identifying representative watershed for the Urmia Lake Basin, Iran*", Environmental Monitoring and Assessment, January 2019, 191:45.
- 56- M. Arshadi Pirlar, M. Rezaei Mirghaed, Y. Honarmand, **S. M. S. Movahed**, R. Karimzadeh, "*Light scattering through the graphene oxide liquid crystal in a micro-channel*", Optics express, Vol. 27, Issue 17, pp. 23864-23874 (2019)
- 57- **S. M. S. Movahed**, AV Sadr, M Farhang, “*Searching cosmic strings network in the CMB*”, International Journal of Modern Physics D, 2040006 (2019).
- 2020**
- 58- M Bahraminasr, **S. M. S. Movahed**,” *Bias factor in Anisotropic Stochastic Fields*”, to be appeared in Iranian Journal of Physics Research, 2020.
- 59- Ansarifard, S and Rasia, E and Biffi, V and Borgani, S and Cui, W and De Petris, M and Dolag, K and Ettori, S and **S. M. S. Movahed** and Murante, G and others "The Three Hundred Project: Correcting for the hydrostatic-equilibrium mass bias in X-ray and SZ surveys." Astronomy & Astrophysics 634 (2020): A113.
- 60- Yousefzadeh, M., and **S. M. S. Movahed**. "*Evolution of the generalized multifractal dimension of dark matter density field in the Illustris simulation.*" Iranian Journal of Physics Research 20.3 (2020): 547-556.
- 61- Arshadi Pirlar, Maghsoud and Honarmand, Yasaman and Rezaei Mirghaed, Milad and **S. M. S. Movahed**, and Karimzadeh, Rouhollah "Birefringent Graphene Oxide Liquid Crystals in Microchannel for Optical Switch." ACS Applied Nano Materials 3.3 (2020): 2123-2128.
- 62- Ansarifard, Saeed, and **S. M. S. Movahed**. "Cosmological consequences of intrinsic alignments supersample covariance." Monthly Notices of the Royal Astronomical Society 499.4 (2020): 6094-6104.
- 63- Ebrahimi, Aghile, Majid Monemzadeh, Hossein Moshafi, and **S. M. S. Movahed**. "Tension Reduction between Planck data and LSS by Dynamical Dark Energy Model." Mathematics Interdisciplinary Research 5, no. 2 (2020): 113-130.
- 64- **S. M. S. Movahed**, and M. Farhang. "Polarization of the CMB cold spot by the gravitational lensing of a cosmic void and texture." Iranian Journal of Physics Research 19.3 (2020): 611-620.

2021

- 65- Farhang, Marzieh, and **S. M. S. Movahed**. "CMB Cold Spot in the Planck light." The Astrophysical Journal 906.1 (2021): 41.
- 66- Vafaei Sadr, A., and **S. M. S. Movahed**. "Clustering of local extrema in Planck CMB maps." Monthly Notices of the Royal Astronomical Society 503.1 (2021): 815-829.
- 67- Danial Papi and S. M. S. Movahed , "Modularity Cluster finding in Financial Time Series", to be appeared in Iranian Journal of Physics Research (2021).
- 68- Yousefzadeh, Mehdi and Esfahanian, Parsa and **S. M. S. Movahed**, and Gorgin, Saeid and Lashgari, Reza and Rahmati, Dara and Kiani, Arda and Kahkouee, Shahram and Nadji, Seyed Alireza and Haseli, Sara and others "ai-corona: Radiologist-assistant deep learning framework for covid-19 diagnosis in chest ct scans., PloS one 16 (5), e0250952, medRxiv (2020).
- 69- Alireza Vafaei Sadr, **S. M. S. Movahed**, Marzieh Farhang, Christophe Ringeval, Francois R. Bouchet, Bruce Bassett and Martin Kunz, "Multi-scale search machine to detect cosmic string", to be appeared in IJMPD, 2021.
- 70- H. Masoomy, B. Askari, M. N. Najafi, and S. M. S. Movahed, "Persistent Homology of Fractional Gaussian Noise.", Phys. Rev. E 104, 034116, 2021

2022

- 71- Torki, M., et al. "Planck limits on cosmic string tension using machine learning." Monthly Notices of the Royal Astronomical Society 509.2 (2022): 2169-2179.
- 72- Masoomy, H., S. Tajik, and **S. M. S. Movahed**. "Homology groups of embedded fractional Brownian motion." Physical Review E 106.6 (2022): 064115.

Submitted papers

- 73- Z. Koochi Lai, **S.M.S. Movahed**, H. Dashtian, G.R. Jafari, Muhammad Sahimi, "Analysis of the properties of large-scale porous media by the joint multifractal approach"

Papers Published in proceeding

- 74- Sepehr Arbabi Bidgoli, **S.M.S. Movahed**, "Structure formation in a variable dark energy model and observational constraints", Published in the proceeding of International Astrophysics Conference November7-11, Munich, Germany Status: November 3, **2005** (VB).
- 75- **S.M.S. Movahed**, "Fractal Analysis of Cosmic Microwave Background", Summer school on Particle Physics and Cosmology, Les Houches, France, August (**2006**),
- 76- S. Kimiagar, **S.M.S. Movahed**, M. Rahimi Tabar, "Fractal properties of plasma discharge current fluctuation", 36th EPS Conference on Plasma Physics June 29 - July 3, 2009, ECA, Vol33E, P-2.118(2009), Sofia, Bulgaria **2009**.
- 77- Paulo Ferreira, Andreia Dion'isio and **S.M.S. Movahed**, "Globalization of Stock Markets: Long-range Dependences", 2014 SINGULAR SPECTRUM ANALYSIS WORKSHOP, Bournemouth, United Kingdom 8-9th September (2014).
- 78- Vafaei Sadr, Alireza, et al. "Multi-scale search machine to detect cosmic strings." The Fifteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (In 3 Volumes). 2022.

Preprints

- 79- Sohrab Rahvar **S.M.S. Movahed** and M. Saadat, "The Effect of Uncertainty Principle on the Thermodynamics of Early Universe", arXiv:astro-ph/0508322.

Project in progress (most important ones):

- 80- "Clustering features in Stock market data sets", Paulo Ferreira, Andreia Dionsio, S. **S.M.S. Movahed**. In collaboration with CEFAGE-UE (Center for Advanced Studies in Management and Economics of the University of vora) Instituto Superior de Lnguas e Administrao de Leiria Department of Animal Science and Technology, School of Agriculture (Elvas), Polytechnic Institute of Portalegre.
- 81- "Dynamical assessment of multifractality in Stock market", Paulo Ferreira, Andreia Dionsio, S. **S.M.S. Movahed**. In collaboration with CEFAGE-UE (Center for Advanced

Studies in Management and Economics of the University of vora) Instituto Superior de Lnguas e Administrao de Leiria Department of Animal Science and Technology, School of Agriculture (Elvas), Polytechnic Institute of Portalegre.

- 82- “Multifractal analysis of Planck data based on MF-DFA”.
- 83- “Geometrical properties of CMB data sets”.
- 84- “Detection of Non-Gaussianity from arbitrary feature of f_{nl} using multi-scaling methods”.
- 85- “Clustering of up-crossing in cosmological stochastic fields”.
- 86- Crossing statistics of anisotropic cosmological random fields.
- 87- “Generalized Bias factor for anisotropic random fields”.
- 88- “Multifractal Analysis of Ly-alpha forest”
- 89- “Extended self-similarity of CMB inspired by Turbulence phenomena”.
- 90- “Structure formation of large scale structures in presence of Dark energy – Dark matter interactions”.
- 91- “A template for asymmetry in polarization of CMB”, in collaboration with J. Khodaghholizadeh, R. Mohammadi.
- 92- “Multifractal Gaussian Weighted Detrended Cross-Correlation Analysis”.
- 93- A.R. Vafaei Sadr, A.H. Shirazi, N. Khosravi, **S.M.S. Movahed**, “Percolation in the large scale structures”.
- 94- “ H_0 tension in cosmology”.

Publications in International and national conferences

- 95- **S.M.S. Movahed**, A.Z. Moshfegh, “Correlation between electronic and catalytic properties of CuO in IAP alcoholic decomposition”, 2003.
- 96- G.R. Jafari, **S.M.S. Movahed**, “Can we predict the price of stock markets?”, 2005.
- 97- **S.M.S. Movahed**, G.R. Jafari, “Activity and development of stock markets”, 2005.
- 98- **S.M.S. Movahed**, S. Rahvar, M.R. Rahimi Tabar, “Statistical property of CMB”, 2006.
- 99- **S.M.S. Movahed**, S. Rahvar, M.R. Rahimi Tabar, “Fractal analysis of CMB”, 2006.
- 100- **S.M.S. Movahed**, S. Ghassemi, “Is the thick brane cosmology consistent with observation?”, 2007.
- 101- **S.M.S. Movahed**, S. Rahvar, M.R. Rahimi Tabari, “Level crossing analysis of CMB”, 2007.
- 102- S. Kimiagar, **S.M.S. Movahed**, M.R. Rahimi Tabari, “Fractal Analysis of discharge current in plasma”, 2007.
- 103- S. Hajian, **S.M.S. Movahed**, “Detrended cross correlation of river flow and sun spot”, 2008.
- 104- R. Panahinia, **S.M.S. Movahed**, S. Rahvar, “Looking for local anisotropy using SNIa”, 2008.
- 105- S. Hosseinabadi, A.A. Masoudi, **S.M.S. Movahed**, “Scaling properties of growth surface models”, 2009.
- 106- H. Moshafi, **S.M.S. Movahed**, “CMB power spectrum in the presence of power-law Dark energy model”, 2009.
- 107- R. Emami, H. Firouzjahi, **S.M.S. Movahed**, “Charged scalar inflationary field model”, 2009.
- 108- **S.M.S. Movahed**, S. Khosravi, “Simulation of Cosmic strings network”, 2009.
- 109- S. Kimiagar, **S.M.S. Movahed**, M. R. Rahimi Tabar, “Markov properties of discharge current in plasma”, 2009.
- 110- H. Vakili, R. Emami, **S.M.S. Movahed**, “The consequence of recent supernova type Ia observations on the Adiabatic Matter Creation model”, 2010.
- 111- M. Ghasemi Nezhadhighi, S. M. Vaez Allaei, T. Yasseri and **S.M.S. Movahed**, “Statistical study of anisotropic rough surface using level crossing analysis”, 2010.
- 112- H. Vakili, **S.M.S. Movahed**, “Detection of local anisotropy using peculiar velocity SNIa”, 2010.

- 113- H. Moshafi, **S.M.S. Movahed**, S. A. Sojasi, “*Properties of inflaton field deviation from quantum thermal vacuum*”, 2010.
- 114- H. Moshafi, **S.M.S. Movahed**, “*Footprint of power-law dark energy model on CMB and large scale structures*”, 2010.
- 115- S. Hosseinabadi, M.A. Rajabpour, **S.M.S. Movahed**, S.M. Vaez Allaei, A.A. Masoudi, “*Statistical properties of growth rough surfaces on irregular substrates*”, 2010.
- 116- S. Hosseinabadi, M.A. Rajabpour, **S.M.S. Movahed**, S.M. Vaez Allaei, A.A. Masoudi, “*The effect of substrate on statistical model of surface growth*”, Molecular physics, Journal, Tehran, Iran, 2009
- 117- B. Javanmardi, H. Moshafi, **S.M.S. Movahed**, “*Detection of Cosmic strings using Peak-Peak*”, 2011.
- 118- Z. Kohi, **S.M.S. Movahed**, G. R. Jafari, H. Dashtian, “*Petrophysical quantities in fractional random field*”, 2011.
- 119- **S.M.S. Movahed**, B. Javanmardi, H. Moshafi, , “*Two-point correlation function of peaks in the cosmic microwave background radiation*, 2011.
- 120- Z. Sheikholeslami, **S.M.S. Movahed**, “*Bayesian shape measurement of Galaxies*”, 2011.
- 121- M. Yazdizadeh, **S.M.S. Movahed**, “*Canny algorithm and Cosmic Strings*”, 2011.
- 122- I. Eghdami, **S.M.S. Movahed**, “*Statistical properties of contour loop on CMB map*”, 2010.
- 123- R. Monadi, **S.M.S. Movahed**, “*Statistical properties of glitch in pulsars*”, 2012.
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- 170- Mostaghel, Behrang; Moshafi, Hossein; **S.M.S. Movahed**, “*ISW-Galaxy Cross-Correlation of Viscous Dark Energy Model*”, 2018
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- 173- Eghdami, Issa1; Panahi, Hossein; **S.M.S. Movahed**; Monadi, Reza;” *The effect of structural parameters on the complexity of pulsars’ pulse profile*”, 2018.
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- 180- Haghghat Goo, Ali; Arshadi Pirlar, Maghsoud; **S.M.S. Movahed**, “*Determination of Anisotropic two-dimensional random field using conditional crossing statistics*”, 2018.
- 181- Masoomy, Hosein; Askari, Behrooz; **S.M.S. Movahed**, “*Computational Topology-based analysis of data sets correlation function*”, 2018.
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- 184- Mohammadi, Melika-Sadat; Arshadi Pirlar, Maghsoud; **S.M.S. Movahed**, “*Cumulants analysis: A pipeline for determine nanoparticles number density in nanofluid*”, 2020.
- 185- Hoda Taeb, Marjan Mozaffarilegha and **S.M.S. Movahed**, “*Peak statistics of Auditory Brainstem Responses to spoken syllable/da*”, 2020.
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- Topological analysis for investigation of Functional Brain Networks in Schizophrenia*", 2020.
- 187-** Rahimi-Majd, Milad; **S.M.S. Movahed**, "Transitivity of Peaks Network in CMB Temperature Field", 2020.
- 188-** Kazemi, Mahrokh; Goodarzi, Pooyan; **S.M.S. Movahed**, "Searching for Stochastic Gravitational Waves by Complex Network Analysis of Pulsar Timing arrays", 2020.
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- 190-** Haghightgoo, Ali; **S.M.S. Movahed**, "Correspondence between percolation phase transition order parameter and variational auto-encoder latent parameter", 2021.
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- 197-** Esfahanian, Niloufar; Yousefzadeh, Mehdi; **S.M.S. Movahed**, "Detection of Gravitational Wave using Topological based Data Analysis: Non-spinning Binary Black Holes Coalescing event", 2022.
- 198-** Jalali, Mohammad Hosein, **S.M.S. Movahed**, "Crossing and Conditional Crossing Statistics in Redshift Space: Constraining Redshift Space Parameter", 2022.

● Programming Experiences

- Linux, Windows and Mac OS.
- Visual DIGITAL Fortran 90 programming.
- Mathematica, Maple, Curve expert, Table curve, Gnu plot, IDL, Python, ...
- Familiar with Python programming.
- Familiar with Matlab programming.

● Teaching Experience (apart of)

- 1- Critical Phenomena and Phase transitions courses for PhD students
- 2- Optimization topics for PhD students
- 3- Modern cosmology course for PhD students.
- 4- Computational Physics course for master and PhD students.
- 5- Special topics for data analysis in observational cosmology for master and PhD students.
- 6- Statistical Mechanics course for undergraduate students, some of my relevant reference books are : "Thermodynamics and statistical mechanics " by: Greiner,

Neise and Stocker;

- 7- "Statistical Mechanics", by: R.K. Pathria.
- 8- Advanced topics in stochastic data analysis, Methods and applications course for PhD students.
- 9- Advanced Statistical physics 2 for master and PhD students.
- 10- Advanced Mathematical Physics for graduate students.
- 11- Electrodynamics for graduate students.
- 12- Mathematical Physics for undergraduate students.
- 13- Electromagnetism for undergraduate students.
- 14- Fundamental Physics 1 for undergraduate students.
- 15- Fundamental Physics 2 for undergraduate students.
- 16- Fundamental Physics 3 for undergraduate students.
- 17- Electronic Lab for undergraduate students.
- 18- Mechanical Lab for undergraduate students.

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