

Sahil Saini

CONTACT INFORMATION

Department of Physics, Guru Jambheshwar University
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EDUCATION

Louisiana State University (LSU), Baton Rouge, USA
PhD

Aug 2015 – May 2019

Indian Institute of Technology Delhi, New Delhi, India
Masters in Physics

July 2008 – May 2010

Govt. Post Graduate College, Hisar (Haryana), India
Bachelors in Science

July 2005 – June 2008

PUBLICATIONS AND PRE-PRINTS

1. Bao-Fei Li, Sahil Saini and Parampreet Singh, “Primordial power spectrum from a matter-Ekpyrotic bounce scenario in loop quantum cosmology,” *Physical Review D* 103, 066020, March 2021.
2. Sahil Saini and Parampreet Singh, “von Neumann stability analysis of quantization ambiguities in modified LQC,” *Classical and Quantum Gravity* 36(10), 105010, April 2019.
3. Sahil Saini and Parampreet Singh, “Generic absence of strong singularities and geodesic completeness in modified loop quantum cosmologies,” *Classical and Quantum Gravity* 36(10), 105014, April 2019.
4. Sahil Saini and Parampreet Singh, “Generic absence of strong singularities in loop quantum Bianchi-IX spacetimes,” *Classical and Quantum Gravity* 35(6), 065014, February 2018.
5. Sahil Saini and Parampreet Singh, “Resolution of strong singularities and geodesic completeness in loop quantum Bianchi-II spacetimes,” *Classical and Quantum Gravity* 34(23), 235006, December 2017.
6. Javier Olmedo, Sahil Saini and Parampreet Singh, “From black holes to white holes: a quantum gravitational, symmetric bounce,” *Classical and Quantum Gravity* 34(22), 225011, October 2017.
7. Sahil Saini and Parampreet Singh, “Geodesic completeness and the lack of strong singularities in effective loop quantum Kantowski-Sachs spacetime,” *Classical and Quantum Gravity* 33(24), 245019, December 2016.

TALKS AND CONFERENCES

1. “Primordial power spectrum from a matter-ekpyrotic bounce scenario in loop quantum cosmology,” *Sixteenth Marcel Grossmann Meeting (MG16) on recent developments in theoretical and experimental general relativity, astrophysics and relativistic field theories*, Virtual Meeting, July 2021.
2. “Primordial power spectrum from the matter-Ekpyrotic scenario in isotropic loop quantum cosmology,” *26th International e-Conference of International Academy of Physical Sciences (CONIAPS XXVI)*, Sant Longowal Institute of Engineering & Technology, Punjab, India, December 2020.
3. “Singularity resolution in anisotropic and black hole spacetimes in loop quantum cosmology,” *National Webinar on Advances in Physics*, Guru Jambheshwar University of Science & Technology, Hisar, India, June 2020.
4. “Singularity resolution in anisotropic spacetimes in loop quantum cosmology,” *CTP Seminar*, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, India, February 2019.
5. “Quantization ambiguities and singularity avoidance in loop quantum cosmology,” *Webinar*, Raman Research Institute, Bangalore, India, July 2018.
6. “Geodesic completeness and lack of strong singularities in loop quantization of Kantowski-Sachs spacetime,” *21st International Conference on General Relativity and Gravitation (GR21)*, Columbia University, New York City, USA, July 2016.
7. “Boundedness of curvature invariants and lack of strong singularities in loop quantization of Kantowski-Sachs spacetime,” *APS April Meeting*, Salt Lake City, Utah, USA, April 2016.

FEATURED ARTICLES ON MY WORK

1. “Black and White Hole Twins Connected by Quantum Gravity” by Javier Olmedo, Sahil Saini and Parampreet Singh, featured in ‘IOPselect’ on CQG+, November 2017.
2. “Want to crush a singularity? First make it strong and then...” by Parampreet Singh, featured in ‘Author Insights’ and ‘IOPselect’ on CQG+, January 2017.

REVIEWER	International Journal of Modern Physics D (IJMPD), Modern Physics Letters A (MPLA).		
TECHNICAL SKILLS	Mathematica, FORTRAN, Python, C, C++, Latex, Machine Learning (ML) and Artificial Neural Networks (ANN).		
ORGANIZATIONAL SKILLS	<ol style="list-style-type: none"> 1. Helped organize International Loop Quantum Gravity Seminar (ILQGS) at LSU (during 2017-18). 2. Helped Organize weekly group discussions at the theoretical gravity group at Dept. of Physics & Astronomy, LSU during (2017-18). 		
AWARDS & SCHOLARSHIPS	<ol style="list-style-type: none"> 1. Selected for the prestigious Dr. D.S. Kothari Postdoctoral Fellowship (Higher Fellowship) (82nd list) in 2019. 2. Javier Olmedo, Sahil Saini and Parampreet Singh, "From black holes to white holes: a quantum gravitational, symmetric bounce," <i>Classical and Quantum Gravity</i> 34(22), 225011, October 2017. Selected for an 'Insight' piece to be featured on CQG+. 3. Sahil Saini and Parampreet Singh, "Geodesic completeness and the lack of strong singularities in effective loop quantum Kantowski-Sachs spacetime," <i>Classical and Quantum Gravity</i> 33(24), 245019, December 2016. Selected for an 'Insight' piece to be featured on CQG+. 4. Ranked 20th in CSIR-NET 2010 (National Eligibility Test, India) and qualified for JRF (Junior Research Fellowship) for further studies. 5. IITD Semester Merit Award during Masters, and recommended by the Physics Department, IITD for Merit Cum Means(MCM) Scholarship. 6. Scholarship by Freie University Berlin (Germany) for a summer project (May, 2009 – July, 2009) on Thomas Fermi Approximation and General Relativistic Stars under the guidance of Prof. Hagen Kleinert. 7. Ranked 4160 in IIT-JEE 2005 (Indian Institute of Technology- Joint Entrance Examination). 		
TEACHING EXPERIENCE	<p>Guru Jambheshwar University of Science & Technology, Hisar (Haryana, India) <i>Assistant Professor</i> Aug 2019 – present</p> <p>Louisiana State University, Baton Rouge (USA) <i>Teaching Assistant</i> Aug 2015 – Aug 2017 & Aug 2018 – Dec 2018</p> <p>SGTB Khalsa College, University of Delhi, Delhi (India) <i>Assistant Professor</i> Jul 2014 – May 2015</p> <p>Deen Dayal Upadhyaya College, University of Delhi, Delhi (India) <i>Assistant Professor</i> Jan 2013 - May 2013</p> <p>The GATE (Graduate Aptitude Test in Engineering) Coach, Delhi (India) <i>Lecturer of Physics</i> July 2010 - Dec 2013</p>		
REFERENCES	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> <p>Parampreet Singh Associate Professor of Physics & Adjunct Faculty at Center for Computation and Technology, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: psingh@phys.lsu.edu</p> <p>Javier Olmedo Nieto Junior Faculty, Department of Theoretical Physics & Cosmos, Universidad de Granada, E-18071 Granada, Spain e-mail: javolmedo@ugr.es, jolmedo.ugr@gmail.com</p> </td> <td style="vertical-align: top; width: 50%;"> <p>Jorge Pullin Professor and Co-Director, Hearne Institute for Theoretical Physics, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: pullin@phys.lsu.edu</p> </td> </tr> </table>	<p>Parampreet Singh Associate Professor of Physics & Adjunct Faculty at Center for Computation and Technology, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: psingh@phys.lsu.edu</p> <p>Javier Olmedo Nieto Junior Faculty, Department of Theoretical Physics & Cosmos, Universidad de Granada, E-18071 Granada, Spain e-mail: javolmedo@ugr.es, jolmedo.ugr@gmail.com</p>	<p>Jorge Pullin Professor and Co-Director, Hearne Institute for Theoretical Physics, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: pullin@phys.lsu.edu</p>
<p>Parampreet Singh Associate Professor of Physics & Adjunct Faculty at Center for Computation and Technology, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: psingh@phys.lsu.edu</p> <p>Javier Olmedo Nieto Junior Faculty, Department of Theoretical Physics & Cosmos, Universidad de Granada, E-18071 Granada, Spain e-mail: javolmedo@ugr.es, jolmedo.ugr@gmail.com</p>	<p>Jorge Pullin Professor and Co-Director, Hearne Institute for Theoretical Physics, Department of Physics & Astronomy, Louisiana State University, Baton Rouge 70803, USA e-mail: pullin@phys.lsu.edu</p>		