Yoshini Bailung

Curriculum Vitae

Personal Details

Date of birth:	11th July 1996
Designation:	PhD Scholar
Address:	Department of Physics, Indian Institute of Technology Indore, Simrol, MP-453552, India
Nationality:	Indian
email:	yoshini.bailung@cern.ch; yoshini.bailung.1@gmail.com
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Research Interests

1. **Experimental Data Analysis with ALICE@CERN:**
   Data Analysis of charm production in pp collisions at $\sqrt{s}$ =13 TeV with ALICE at the LHC, CERN
   - Study of self normalised yields of average D-meson as function of charged particle multiplicity
   - Study of average D-meson production as a function of event shapes
2. **Heavy-Ion Physics Phenomenology:**
   - Light (anti-)nuclei production via coalescence mechanism in heavy-ion collisions
   - Study of heavy-flavor production in heavy-ion/hadronic collisions using event generators
   - Measurements in anisotropic flow harmonics as a probe to detect formation of Quark Gluon Plasma
3. **Machine Learning:**
   - Machine learning and deep learning applications in high energy physics
   - Detection of muon tracks from J/Ψ decay using artificial neural networks
   - Use of machine learning in signal reconstruction for the Zero Degree Calorimeter with ALICE

Publications

1. **Yoshini Bailung**, Neha Shah, Ankhi Roy; *"Searching for enhancement in coalescence of in-jet (anti-)deuterons in proton–proton collisions"*; [Under Review]
2. **Yoshini Bailung**, Neha Shah, Ankhi Roy; *"Exploring light nuclei production at RHIC and LHC energies with A Multi-Phase Transport model and a coalescence afterburner"*; Published in **Nuclear Physics A**; [10.1016/j.nuclphysa.2023.122701]
3. Ravindra Singh, **Yoshini Bailung**, Sumit Kumar Kundu, Ankhi Roy; *"Jet fragmentation via azimuthal angular correlations of electrons from heavy flavor decay in pp, p-Pb, and Pb-Pb collisions using PYTHIA8+Angantyr calculations"*; Published in **Physical review C**; [10.1103/PhysRevC.107.024911]

4. Sumit Kumar Kundu, **Yoshini Bailung**, Sudhir Pandurang Rode, Partha Pratim Bhaduri, Ankhi Roy; *"Effect of various particlization scenarios on anisotropic flow and particle production using UrQMD hybrid model"*; Published in **Nuclear Physics A**; [10.1016/j.nuclphysa.2022.122574]

5. Ravindra Singh, **Yoshini Bailung**, Ankhi Roy; *"Dynamics of particle production in Pb–Pb collisions at* $\sqrt{s_{NN}}$ *= 2.76 TeV using PYTHIA8 Angantyr model"*; Published in **Physical review C**; [10.1103/PhysRevC.105.035202]

6. Sumit Kumar Kundu, **Yoshini Bailung**, Sudhir Pandurang Rode, Partha Pratim Bhaduri, Ankhi Roy; *"Dependence on beam energy and nuclear equation of state of anisotropic flow and particle production in low-energy heavy-ion collisions"*; Published in **Physical Review C**; [10.1103/PhysRevC.104.024907]

ALICE Analysis Notes

1. Marco Giacalone, **Yoshini Bailung**, Randhir Singh ; *"Measurement of D-meson (*D^0, D^+, D^{*+}*) production as a function of event shapes in proton–proton collisions at* $\sqrt{s} = 13$ *TeV"*; ALICE Analysis Note; ID number: 1240; [Link to contribution]

2. Marco Giacalone, **Yoshini Bailung**, Randhir Singh ; *"Measurement of D-meson (*D^0, D^+, D^{*+} *) production versus charged particle multiplicity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV"*; ALICE Analysis Note; ID number: ANA-1167; [Link to contribution]

Conference Proceedings

1. **Yoshini Bailung**, on behalf of ALICE Collaboration; *"Heavy-flavour production as a function of charged-particle multiplicity with ALICE at the LHC"*; Submitted to **MDPI Proceedings Series for Hot Quarks 2022, 11 – 17 October 2022** [Under review]

2. **Yoshini Bailung**, Sudhir Pandurang Rode, Neha Shah, Ankhi Roy; *"Production of light nuclei in heavy-ion collisions via a coalescence mechanism"*; Published in **Proceedings of 67th DAE Symposium on Nuclear Physics, 9 - 13 December 2023** [proceedings/snp2023];

3. Sumit Kumar Kundu, **Yoshini Bailung**, Sudhir Pandurang Rode, Partha Pratim Bhaduri, Ankhi Roy; *"Dependence of anisotropic flow and particle production on particlization models and nuclear equation of state"*; Published in **Dynamics of HOT QCD Matter – Current status and Developments, International Journal of Modern Physics E, 12-14 May, 2022**[proceedings/HotQCD2022]

4. Sumit Kumar Kundu, **Yoshini Bailung**, Sudhir Pandurang Rode, Partha Pratim Bhaduri, Ankhi Roy; *"Dependence of anisotropic flow of net-protons on particlization model for various nuclear equation of state"*; Published in **Proceedings of 65th DAE Nuclear Physics Symposium, 1-5 December, 2021** [proceedings/snp2021]

5. **Yoshini Bailung**, on behalf of ALICE Collaboration; *"Measurements of heavy-flavor production as a function of multiplicity with ALICE at the LHC"*;**SciPost Physics Proceedings of the 50th International Symposium on Multiparticle Dynamics (ISMD2021), 12-16 July, 2021** [10.21468/SciPostPhysProc.10.033]

6. **Yoshini Bailung**, on behalf of ALICE Collaboration; *"Measurement of* D*-meson production as a function of charged-particle multiplicity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV with ALICE at the LHC"*; Published in **Proceedings of the 9th Annual Large Hadron Collider Physics (LHCP2021) conference, 7 - 12 June, 2021**

[pos.sissa.it/397/190]

Talks

1. "*Searching for collective-like effects for heavy-flavour in small systems with ALICE*" at the **14 International Workshop on Multiple Parton Interactions at the LHC, MPI@LHC 2023**, University of Manchester, Manchester, United Kingdom, 20-24 November 2023; [Link to contribution]
2. "*Measurement of heavy-flavour production as a function of charge-particle multiplicity with ALICE at the LHC*" at the **4th Heavy Flavour Meet 2023**, IIT Goa, Goa, India, 2-4 November, 2023; [Link to contribution]
3. "*Measurement of heavy-flavor production as a function of charge-particle multiplicity with ALICE at the LHC*" at the **9th edition of the Workshop for Young Scientists on the Physics of Ultra-relativistic Nucleus-Nucleus Collisions (Hot Quarks 2022)**, Colorado, USA, 11-17 October, 2022; [Link to contribution]
4. "*Measurement of* D*-meson production as a function of transverse spherocity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV with ALICE at the LHC*" at the **ALICE-India Collaboration Meeting 2022**, Variable Energy Cyclotron Center, Kolkata, India, 5-8 September, 2022; [Link to contribution]
5. "*Measurement of* D*-meson production as a function of charged-particle multiplicity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV with ALICE at the LHC*" at the **ALICE-India Collaboration Meeting 2021**, Panjab University, India, 17-20 August, 2021; [Link to contribution]
6. "*Measurements of heavy-flavor production as a function of multiplicity with ALICE at the LHC*" at the **50th International Symposium on Multiparticle Dynamics (ISMD2021)**, virtual, 12-16 July, 2021; [Link to contribution]
7. "D^0 *meson production as a function of charged particle multiplicity in pp collisions at* $\sqrt{s}$ *=13 TeV with ALICE*" at the **ALICE-India Collaboration Meeting 2021**, NISER-Bhubaneshwar, India, 9-12 March, 2021; [Link to contribution]

Posters

1. **Yoshini Bailung**, Sudhir Pandurang Rode, Neha Shah, Ankhi Roy;
"*Production of light nuclei in heavy-ion collisions via a coalescence mechanism*" at the **67th DAE Symposium on Nuclear Physics, 9 - 13 December 2023, IIT Indore, Indore, India**;
2. Swapnesh Khade, Ravindra Singh, **Yoshini Bailung**, Ankhi Roy;
"*Influence of parton distribution functions on* $D^0 - \overline{D}^0$ *azimuthal angular correlations*" at the **4th Heavy Flavour Meet, 2 - 4 November 2023, IIT Goa, Goa, India**;
3. Sumit K. Kundu, **Yoshini Bailung**, Ravindra Singh, Sudhir P. Rode, Ankhi Roy;
"*Deuteron production using UrQMD model via a coalescence afterburner at SPS energies*" at the **ICPAQGP, 7 - 10 February, 2023, Puri, Odisha, India**;
4. **Yoshini Bailung**, on behalf of ALICE Collaboration;
"*Measurement of* D*-meson production as a function of charged-particle multiplicity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV with ALICE at the LHC*" at the **29th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions (Quark Matter), 4 - 10 April, 2022, Krakow, Poland**; [Link to contribution]

5. **Yoshini Bailung**, on behalf of ALICE Collaboration;
"*Measurement of* D*-meson production as a function of charged-particle multiplicity in proton-proton collisions at* $\sqrt{s} = 13$ *TeV with ALICE at the LHC*" at the **9th Annual Large Hadron Collider Physics (LHCP2021) conference, 7 - 12 June, 2021**; [Link to contribution]

Education

2019-present	PhD in Physics at **IIT Indore**
2017-2019	Master of Science in Physics from **Gauhati University**
2014-2017	Bachelor of Science in Physics from **University of Delhi**

Mentoring

1. Shankar Nair [Masters Student 2022 -2023]
Thesis Title : "*Simulation studies of* π^0*,* η *and* ω *meson reconstruction performance in pp collisions at* $\sqrt{s} = 14$ *TeV in Forward Calorimeter (FoCal), ALICE*"

2. Anurag [Masters Student 2022-2023]
Thesis Title : "*Flavour-dependent study of effects of multiple parton interactions and colour reconnection on the jets*"

3. Diksha Sharma [Masters Student 2021-2022]
Thesis Title : "*Feasibility Study of Exotic Particle X(3872) with ATHENA in EIC Experiment and its Possible Structures*"

Teaching Assistant-ship

1. Bachelors in Technology Courses: Undergraduate Physics Lab [Practicals], Electrodynamics [Theory]

2. Masters in Physics Courses: Numerical Methods [Practicals], Mathematical Physics [Theory]

Technical and Personal Skills

Operating Systems: Linux, macOS, WINDOWS
Programming Languages: C/C++, python, FORTRAN, Bash
Scientific Packages/Frameworks: ROOT, Mathematica
Specialised Packages/Frameworks: AliPhysics, PYTHIA, AMPT, UrQMD, SMASH
TypeSetting/ Web Development: LaTeX, HTML, CSS, Hugo
Spoken Languages: English, Hindi, Assamese (Mother tongue)

References

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