



INSTITUTE FOR  
COLLIDER  
PARTICLE  
PHYSICS



UNIVERSITY OF THE WITWATERSRAND



## Recruitment of Post-Doctoral Fellow(s) in Multi-institute Research Project

**SGTB Khalsa College, University of Delhi  
and  
Institute for Collider Particle Physics,  
University of the Witwatersrand in Johannesburg, South Africa**

**Date: 7<sup>th</sup> September, 2021**

The international collaboration of Investigators from SERB Sponsored project '*Probing New Physics Interactions*' and Institute for Collider Particle Physics (ICPP) at University of the Witwatersrand in Johannesburg, South Africa invite applications for postdoctoral position(s) at University of Delhi (DU), India to work in **Particle Phenomenology and Applications of Machine Learning at Colliders**. The consolidated fellowship(s) including all allowances of INR 65,000/- per month will be funded by the ICPP, University of the Witwatersrand, Johannesburg. The position(s) are renewable annually, up to two years.

Interested candidates with Ph.D. in High Energy Physics Phenomenology and experience in Machine Learning Applications should send their curriculum vitae, statement of research interests including list of publications and at least one letter of recommendation sent to [newphysicsinteractions@gmail.com](mailto:newphysicsinteractions@gmail.com) latest by **25<sup>th</sup> September, 2021**.

In this project, we plan to

- investigate the ability of present and future colliders in unraveling physics operative at high scales
- identify well-motivated dark matter candidates satisfying each of astrophysical and cosmological constraints while being in compliance with direct and indirect detection experiments.
- perform a robust analysis of the data for all the above experiments using machine learning techniques, in particular deep learning networks.

### Project Investigators:

Ashok Goyal (Retd., DU)  
Bruce Mellado (Director, ICPP, Johannesburg)  
Debajyoti Choudhury (DU)  
Mamta Dahiya (SGTBKC, DU)

Mukesh Kumar (Wits University)  
Satyaki Bhattacharya (SINP, Kolkata)  
Sukanta Dutta (SGTBKC, DU) PI  
Tanumoy Mandal (IISER, Thiruvananthapuram)  
Xifeng Ruan (Wits University)