Paper Submission Form - SAIP2025 Proceedings

Sections A, C, D, and E must be completed by all authors (including students) who submit papers. Section B is compulsory for students who submit manuscript(s).

Section A: Paper Submission Information

Paper/Abstract ID	#369
Paper title	Searches for scalar resonances with di-photon in association with leptons and taus using the easyjet analysis framework in the ATLAS Detector at the LHC.
Corresponding Author Name & Surname:	Kutlwano Makgetha
Corresponding Author Email Address:	2134657@students.wits.ac.za

Section B: For Students & Supervisors

Supervisor Name & Surname:	Bruce Mellado
Supervisor Email Address:	bruce.mellado@wits.ac.za

For this paper, the supervisor must agree/disagree with the following statements.

	Yes	No
1. I am aware that the above-mentioned paper is being submitted for possible publication in the Proceedings of the SAIP Conference. I am satisfied that the presented work is that of the listed authors. I hereby give consent to the submission	X	
2. I have proof-read the manuscript	X	
3. I am satisfied that the manuscript is written in appropriate English and is sufficiently free of grammatical and spelling errors	X	
4. I am familiar with the required manuscript format ("House Style"), and I am satisfied that this manuscript meets the criteria. I am aware that manuscripts not conforming with House Style may be desk rejected	X	
5. I am satisfied that the scientific content of this manuscript is of sufficient standard for it to be considered for publication in the Proceedings of the South African Institute of Physics Conference Proceedings	X	

Student Name & Surname: Kutlwano Makgetha ……………….………..…… **Signature:** ……………………….…… **Date:** 31/07/2025 …………….

Supervisor Name & Surname: Bruce Mellado …………….……….…….. **Signature:** ……………….…….……….. **Date:** 31/07/2025 …………….

Section C: Suggested Reviewers

Obtaining the two referee reports necessary for DHET subsidy is an onerous task.

Please provide the names and contact details of three qualified South African and/or international referees. Referees should have a PhD and expertise in the relevant area of Physics. Do not recommend referees who have co-authored a work with any of the authors on the manuscript within the past five (5) years. Manuscripts without three recommended referees may be subject to desk rejection.

Suggested Reviewers in your Research Field (Both local & international)		
	Reviewer Names & Surname	**Reviewer's Email Address(es)**
Suggested reviewer #1	Edward Nkadimeng	edward.khomotso.nkadimeng@cern.ch
Suggested reviewer #2	Fairouz Malek	fmalek@lpsc.in2p3.fr
Suggested reviewer #3	Hassnae El Jarrari	hassnae.el.jarrari@cern.ch

Section D: Declaration of Novelty and Use of AI

How is this submitted manuscript scientifically novel?

The scientific novelty of this manuscript lies in its targeted, anomaly-driven approach to BSM physics in the

innovative use of machine learning and modern analysis frameworks, and preparation for high-luminosity

Run 3 data with robust, data-driven methods. By focusing on a specific and theoretically well motivated

signature $H \rightarrow SS' \rightarrow \gamma\gamma\tau\tau$ the work fills a niche in current LHC searches and has the potential to either confirm

a major new physics signal or set stringent limits on scalar extensions of the SM.

Please see the Author Guidelines for the AI use policy.

How was AI used in the generation of this manuscript?

I used AI to create tables (see table 1) and run some spelling checks such as grammar polishing and

languange

Section E: Plagiarism

	Yes
I am aware that plagiarism detection software may be used on my manuscript.	X