

# 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	193
Paper title	Coherent State Path Integrals and Vacuum Structure in Thermal $\Phi^4$ Theory on a Finite Volume
Corresponding Author Name & Surname:	Rens Roosenstein
Corresponding Author Email Address:	rens.roosenstein@gmail.com

## Section B: For Students & Supervisors

Supervisor Name & Surname:	William Alexander Horowitz
Supervisor Email Address:	wahorowitz@gmail.com

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: Rens Roosenstein ..... Signature: ..... Date: 30/07/2025

Supervisor Name & Surname: William Horowitz ..... Signature: ..... Date: Jul 31, 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	Isobel Kolb��	isobel.kolbe@wits.ac.za
Suggested reviewer #2	Herbert Weigel	weigel@sun.ac.za
Suggested reviewer #3	Sam van Leeuwen	sam.vanleeuwen@wits.ac.za

## Section D: Declaration of Novelty and Use of AI

### How is this submitted manuscript scientifically novel?

This manuscript extends the recent results presented in arXiv:2507.11608v1. It features an expanded introduction that emphasizes the relevance of this research to the Casimir effect and finite volume corrections to the QCD equation of state. Furthermore, the presentation has been refined through the use of continuum-limit notation, opposed to the discretized notation used in the preceding paper that is on the arXiv. This compactified notation improves the clarity of the main results and enhances the readability of the equations.

**Please see the Author Guidelines for the AI use policy.**

### How was AI used in the generation of this manuscript?

This manuscript was first written as a completed draft by Rens Roosenstein. After having written the full manuscript, ChatGPT was used to do a final grammar and sentence structure check.

## Section E: Plagiarism

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