PROCEEDINGS OF SAIP2017

62nd ANNUAL CONFERENCE OF THE SOUTH INSTITUTE OF PHYSICS

EDITED BY:
Prof. JAPIE ENGELBRECHT

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SAIP2017

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Edited By
Prof. Japie Engelbrecht
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Message From The Conference Chair

Dear SAIP 2017 delegate,

The physics department at Stellenbosch University would like to extend a hearty welcome to you, in the hope that the conference program will live up to your expectations. We trust that the academic program will be enlightening, and that the social program will be conducive to network-building and making good friends.

The Physics Department at Stellenbosch was founded in 1903 and has a proud tradition of contributing to the South African Institute of Physics and its activities. We have the pleasure of hosting the SAIP annual conference again as we have done successfully in the past. As a physics department we focus on theoretical physics, nuclear physics and photonics. We acknowledge the assistance and contribution of our collaborators from iThemba LABS, the CSIR National Laser Centre and the National Institute for Theoretical Physics to the activities of our department and, particularly, their support for this conference. We thank the plenary speakers who accepted the invitation and have travelled to address the 2017 Annual Conference of the SAIP, and we thank the various sponsors who have made their participation possible. In hosting this conference we embrace the opportunity to facilitate engagement of all the various disciplines in physics participating at the conference. We hope to serve the broader physics community to develop its identity as a professional institute, representing all physicists.

We trust that the workshops will have a positive effect on our younger researchers, and that the plenary presentations will broaden our horizons. Last, but not least, it is our wish that you also enjoy the social activities offered during the week and that you leave Stellenbosch inspired and refreshed.

Prof. EG Rohwer
Head of Physics Department
Chair of the LOC
Message from the Editor

It took me a while to consider the request by Prof Deena Naidoo to become the Editor of the SAIP 2017 Conference Proceedings. However, the more I thought about it, the more it made sense: I am retired, one person will deal with all aspects and will coordinate the process and so on. In my mind’s eye I saw delivery of the Proceedings on the expected date, i.e. before the next conference. “After all” (I thought) what could go wrong?” (with apology to the insurance company advertisement on TV).

The production of a journal or a proceedings involves a large number of people: the editorial committee, authors submitting articles, two reviewers for each article and finally the editor. If any of the cogs in this “machine” fails, the whole process slows down and is being delayed. Non the less, the review process cannot be hurried along, as eventually the SAIP expects a Proceedings of a standard comparable to that of international journals. We therefore are hugely indebted to the Content Reviewers for their time and due diligence in the review process.

A total of 116 articles were received. Rejection of articles were due to not complying with the required layout, scientific value or not addressing the concerns and suggested corrections of the Reviewers. This was done with the goal of ensuring maintenance of a standard comparable to that of international journals.

I appeal to all students, supervisors and promoters to take much more care in future upon submission of articles to be considered for publication in the Conference Proceedings, to take a greater responsibility in ensuring that articles adhere to the required Layout, and to ensure that articles are proofread before submission to cut down on grammatical and typographical errors. All this will speed up the editorial process, and ensure that the Proceedings can be published timeously.

I wish to SINCERELY thank the following persons for their help and assistance:

- The Editorial Committee under the leadership of Prof Deena Naidoo
- Tebogo Mokhine, whose IT skills carried the day – without him I would have thrown in the towel long ago!
- Mr Brian Masara, CEO of SAIP and John Basco Habarulema, Council member for SAIP Conference matters
- Division Chairs for identifying reviewers, especially those who stepping up to help at the end.
- All content reviewers who participated and who helped to keep the standard of accepted articles of a high standard.
- Dr. Roelf Botha for managing the proceedings compilation and online publishing.

Prof. Japie Engelbrecht
Editor: SAIP 2017 Conference Proceedings
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