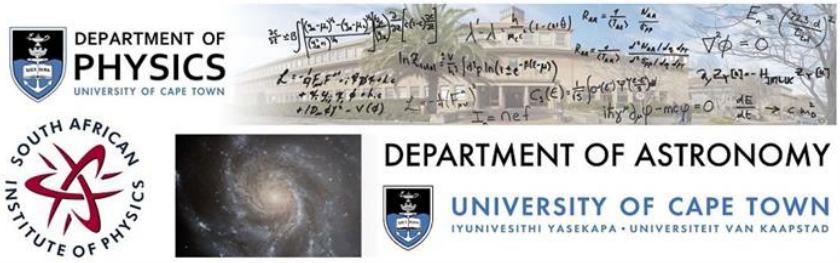

Contribution ID: **394** Type: **Oral Presentation**

PIRANA, an all optical time-domain ptychographic pulse characterisation method

Tuesday, 5 July 2016 14:40 (20 minutes)

Abstract content
   (Max 300 words)
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Pulse characterization of ultrashort laser pulses cannot be done directly as no detector is fast enough. Various methods utilising nonlinear second harmonic and sum frequency generation have been developed since such as FROG, SPIDER, MIIPS etc. We migrated an iterative spatial lens-less imageing technique, ptychography, to the time domain and modified the reconstruction algorithm such that it can be used to do pulse characterisation. The proof of principle experiment was done with a dynamic optical setup which uses spatial light modulators (SLM) in order to generate arbitrary pulse shapes which is then measured with the adapted time-domain ptychography method. Recently we have developed an optical setup which can do the time-domain ptychographic pulse characterisation methods which does not require the use of an SLM called PIRANA.

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Session Classification: Photonics

Track Classification: Track C - Photonics