



Contribution ID: 109

Type: Poster Presentation

Modulating Information onto Laser Beams

Tuesday, 4 July 2017 17:10 (1h 50m)

Mode Division Multiplexing (MDM) is an emerging technology which harnesses the spatial degree of freedom of laser beams to significantly increase the overall capacity of optical communication systems. MDM research is typically carried out using cameras to measure the beam characteristics under various conditions. In high speed digital communication systems, the time domain characteristics of the beam and of the information modulated onto the beams is important, and it is not possible to use existing, camera-based experimental techniques to thoroughly investigate these characteristics. In this presentation, experimental techniques using so-called “radio over optical” will be described along with explanations for how the data may be interpreted to derive useful physical channel characteristics.

Summary

Mode Division Multiplexing (MDM) is an emerging technology which harnesses the spatial degree of freedom of laser beams to significantly increase the overall capacity of optical communication systems. MDM research is typically carried out using cameras to measure the beam characteristics under various conditions. In high speed digital communication systems, the time domain characteristics of the beam and of the information modulated onto the beams is important, and it is not possible to use existing, camera-based experimental techniques to thoroughly investigate these characteristics. In this presentation, experimental techniques using so-called “radio over optical” will be described along with explanations for how the data may be interpreted to derive useful physical channel characteristics.

Apply to be considered for a student award (Yes / No)?

yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

Main supervisor (name and email) and his / her institution

Andrew Forbes, Wits, andrew.forbes@wits.ac.za

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

yes

Primary author: Mr COX, Mitchell (University of the Witwatersrand)

Presenter: Mr COX, Mitchell (University of the Witwatersrand)

Session Classification: Poster Session 1

Track Classification: Track F - Applied Physics