



Contribution ID: 12

Type: Oral Presentation

Pulse Propagation in Soliton based Optical fiber communication.

Thursday, 10 July 2014 11:30 (20 minutes)

**Abstract content
 (Max 300 words)
Formatting &
Special chars**

The main goal of the paper is to present a method of propagating pulses in a fibre without dispersion. Chromatic dispersion in standard fibre at wavelengths longer than 1310 nm causes shorter wavelengths to travel faster than longer ones. Thus a pulse composed of many wavelengths tends to disperse such that the shorter wavelengths tend to move towards the beginning of the pulse. This is called the "anomalous dispersion regime". Thus if a pulse is intense enough to modify the RI the phase and frequency of light within the pulse are changed. This is called self-phase modulation (SPM) and is caused by the "non-linear Kerr effect". So, if you have a pulse of sufficiently high intensity and short-enough duration the faster (high-frequency components) at the beginning of the pulse are slowed down a bit and the slower (low-frequency components) in the back are speeded up. Thus, if the pulse length and the intensity are right, the two effects (chromatic dispersion and SPM) strike a balance and the pulse will stay together without dispersion over quite a long distance.

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NO

**Level for award
 (Hons, MSc,
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NO

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

NO

**Would you like to
 submit a short paper
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YES

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Session Classification: Photonics

Track Classification: Track C - Photonics