Study of light propagation in optical fiber with randomly varying birefringence.

Maxime Gazeau (Ecole Polytechnique)

October 22, 2011

Polarization Mode Dispersion (PMD) is the main limiting effect of high bit rate transmission in long distance communication. It has its origin in the randomly varying birefringence. A model, called the Manakov PMD equation, has been introduced to study this phenomenon. The particularity of this model is the various length scales appearing in the equation. In this talk, I will explain how a limit theorem can be proved (in the sense of convergence in law). I will give numerical results on the limiting equation and estimations on the impact of the PMD.