Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Near-analytic solutions to the PMD equations in Periodically Spun Fiber using Differential Transform Method VINOD MISHRA, US Army Research Laboratory — Periodically spun optical fibers have been found to reduce Polarization Mode Dispersion (PMD) in propagating optical modes [1]. The resulting coupled ordinary differential equations are usually solved numerically. To gain better physical understanding and dependence of PMD Change Factor (PCF) on relevant parameters, analytical solutions are to be preferred. The current work uses Differential Transform Method to derive analytical solutions to the original equations as a series and investigates their properties.

[1] "Analytical Treatment of Randomly Birefringent Periodically Spun Fibers": Anna Pizzinat, Luca Palmieri, Brian S. Marks, Curtis R. Menyuk,and Andrea Galtarossa,J. Lightw. Techn., V. 21, No. 12, (2003) 3355.

Vinod Mishra
US Army Research Laboratory

Date submitted: 12 Nov 2014 Electronic form version 1.4