

Master's Thesis

# Effect of distributed noise on the Nonlinear Fourier Transform

The Nonlinear Fourier Transform (NFT) is a mathematical tool that linearizes the Nonlinear Schrödinger Equation, which is the equation that governs the fiber optic channel [1]. With the help of the NFT, it is possible to remove the nonlinear interference between channels in a fiber optic system. However, the NFT fails to model additive noise. In this thesis, we aim to characterize the effect of noise on the NFT, which would greatly increase the usefulness of this tool for system design.

[1] <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6808480>

## Prerequisites

Knowledge of fiber optic communication theory is not necessarily required, but students applying for this thesis should be familiar with complex analysis.

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## Advisors

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