

A 3D Fast Hartley Transform Plugin for ImageJ

Administrative Information

Company

OptiNav, Inc.

Presentation Information

Full / Half Time Slot: Half Time Slot (25 min)

Contact / Speaker Name

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Presentation Title

A 3D Fast Hartley Transform Plugin for ImageJ

Participant Requirements

Some knowledge of Fourier analysis in image processing (optimally).

Abstract

A 3D Fast Hartley Transform (FHT) plugin has been developed for ImageJ. It is similar to the 2D FHT code that is built into ImageJ, and relies on the same underlying 1D FHT software. The availability of a 3D FHT code enables the construction of a range of 3D plugins for filtering and other operations in ImageJ. This paper gives an overview of some aspects of the FHT and relates it to the more-familiar discrete Fourier transform. The principle difficulty of creating a multi-dimensional FHT code based on multiple applications of a 1D code is reviewed and the solution used in the new plugin is presented. The paper is intended primarily for ImageJ developers who have some knowledge of Fourier analysis in image processing.

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