

Multidimensional quadratic-phase Fourier transform and its uncertainty principles

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In this talk, we propose a multidimensional quadratic-phase Fourier transform (MQFT) that generalizes the well-known and recently introduced quadratic-phase Fourier transform (as well as, of course, the Fourier transform itself) to higher dimensions. In addition, we deduce some crucial and useful properties of this new integral transform. These include a Riemann-Lebesgue lemma for the MQFT, a Plancherel lemma for the MQFT and a Hausdorff-Young inequality for the MQFT. A second objective consists of presenting different uncertainty principles for this MQFT. This talk is based on joint work with Luís P. Castro.

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