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Michael Greenblatt*, 322 Science and Engineering Offices (M/C 249), 851 S Morgan Drive, Chicago, IL 60607. *Van der Corput lemmas, Fourier transforms of irregular hypersurface measures, and some PDE consequences.*

Using one-dimensional Van der Corput lemmas on functions that are either mixed homogeneous in several variables, or are arbitrary real-analytic functions in two variables, we provide local estimates on the Fourier transforms of hypersurfaces with various types of singularities. Applications to associated PDE problems are then described.

The two-dimensional results in addition use a local resolution of singularities theorem dimensions which provides appropriate coordinate systems to effectively use such one-dimensional Van der Corput lemmas. (Received January 16, 2015)