

The FBI transform, Strichartz type estimates and the nonlinear wave equation

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ABSTRACT

The FBI transform is the instrument of choice in the study of partial differential equations with analytic coefficients. Here we show how to turn it around and use it to simplify the analysis of pde's with nonsmooth coefficients. Applied to the wave equation this technique leads to a parametrix construction and further to full Strichartz estimates using only two derivatives on the coefficients. This allows one to improve the local well-posedness results for fully nonlinear hyperbolic equations.