

On finite products of convolutions and classifications of hyperbolic and elliptic equations.

ABSTRACT

In this paper we consider the linear second order partial differential equation with non-constant coefficients; then by using the double convolution product we produce new equations with polynomials coefficients and we classify the new equations. It is shown that the classifications of hyperbolic and elliptic new equations are similar to the original equations that is the classification is invariant after finite double convolutions product.

Keyword: Finite product of convolutions; Hyperbolic equations.