

A note on the classifications of hyperbolic and elliptic equations with polynomial coefficients

ABSTRACT

In this work we consider the hyperbolic and elliptic partial differential equations with constant coefficients; then by using double convolutions we produce new equations with polynomial coefficients and classify the new equations. It is shown that the classifications of hyperbolic and elliptic equations with non-constant coefficients are similar to those of the original equations; that is, the equations are invariant under double convolutions.

Keyword: Hyperbolic equation, Elliptic equation, Double convolution, Classification of PDE