

The aim of this work is to represent the solutions of one-dimensional fractional partial differential equations (FPDEs) of order $(\alpha \in \mathbb{R}^+ \setminus \mathbb{N})$ in both quasi-probabilistic and probabilistic ways. The canonical processes used are generalizations of stable Lévy processes. The fundamental solutions of the fractional equations are given as functionals of stable subordinators. The functions used generalize the functions given by the Airy integral of Sirovich (1971). As a consequence of this representation, an explicit form is given to the density of the 3/2-stable law and to the density of escaping island vicinity in vortex medium. Other connected FPDEs are also considered