

## Partial Fourier Transform Methods to Solve the Solution Formula of Stokes Equation in Half-Space

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<b>Abstract</b>	<p>Fluids are a shape of a matter which have substance liquids, gases and plasmas. In our daily life, fluids become important part, such as part of our blood and also help our body getting nutrients. It is well known that fluid motion can be described in mathematical model in especially in form of partial differential equations (PDE) and called as Navier Stokes Equations (NSE). The Navier Stokes equation is derived from balance of conservation of mass and conservation of momentum. In this paper, we consider the solution formula of the linearized of the Navier Stokes Equation (NSE) with the initial boundary value (IBV) problem in half space without surface tension. The model problem under consideration covers of non-linear fluid type. We solve the solution formula of velocity and density of the model problem by using Fourier transform and partial Fourier transform method. The strategy getting the solution of the model problem is based on the analysis of some resolvent of the model problem which obtained by using Laplace transform of the Stokes equations. Therefore, In particular, the formula of velocity and density of the Stokes equation are obtained.</p>
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