

# ***MIMETIC DISCRETIZATIONS FOR COMPUTATIONAL FLUID DYNAMICS: TWO-DIMENSIONAL CASE***

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## **ABSTRACT**

Preliminary results in two-dimensional fluid flow simulation based on conservative methods are presented. We exhibit a new numerical scheme to solve Navier-Stokes and Artificial Compressibility equations without Dimensions. We used the Crank-Nicolson's scheme and Castillo-Grone 2-2-2 method. To solve the system of linear equations obtained through implicit method, we use the UCSparseLib library which has been developed on ANSI C. Furthermore, we developed a set of tools to display results graphically using OpenGL.

**Key Words:** Mimetic Methods, Navier-Stokes, Fluid Dynamics.