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Shallow-Water equations (SWE) are a set of hyperbolic PDEs that describe the behaviour of a fluid flow below a pressure surface. Such equations can be seen as a variant of Navier-Stokes equations where the horizontal length scale is much greater than the vertical length scale. Under this hypothesis the velocity field can be considered nearly constant throughout the depth of the fluid, allowing to carry out the fluid flow simulation in a two-dimensional context.

In this talk we shall discuss the usage of SWE as a tool for handling digital images. Besides providing a very flexible framework to create three-dimensional effects, SWE offer a very versatile mechanism to control some image processing tasks, as a set of parameters can be tuned to produce a desired result. In fact, the proposed approach introduces a new way of handling digital images, bring the well-developed theoretical framework of computational fluid dynamics closer to image processing context. (Received February 08, 2008)