

Physically-driven methods of simulating fluid dynamics and frequency-based ocean surface synthesis methods are of long-standing interest for the field of computer graphics. However, they have been historically used separately or without any interaction between them. This thesis focuses on the possibility of combining the approaches into one adaptive solution by proposing methods for unified surface representation, method result blending and one-way interaction between the methods. The thesis also outlines several future developments of the combined method and proposes a level-of-detail approach taking advantage of hardware tessellation that can be used regardless of what method was used for the simulation.