
Control of water waves

Thomas Alazard^{*1}

¹Département de Mathématiques et Applications (DMA) – CNRS : UMR8553, École normale supérieure [ENS] - Paris – France

Abstract

Water waves are disturbances of the free surface of a liquid. They are, in general, produced by the immersion of a solid body or by impulsive pressures applied on the free surface. The question we discuss in this talk is the following: which waves can be generated by blowing on a localized portion of the free surface. Our main result asserts that one can generate any small amplitude, periodic in x , two-dimensional, gravity-capillary water waves. This is a result from control theory. More precisely, we prove the local exact controllability of the incompressible Euler equation with free surface. This is a joint work with Pietro Baldi and Daniel Han-Kwan.

^{*}Speaker