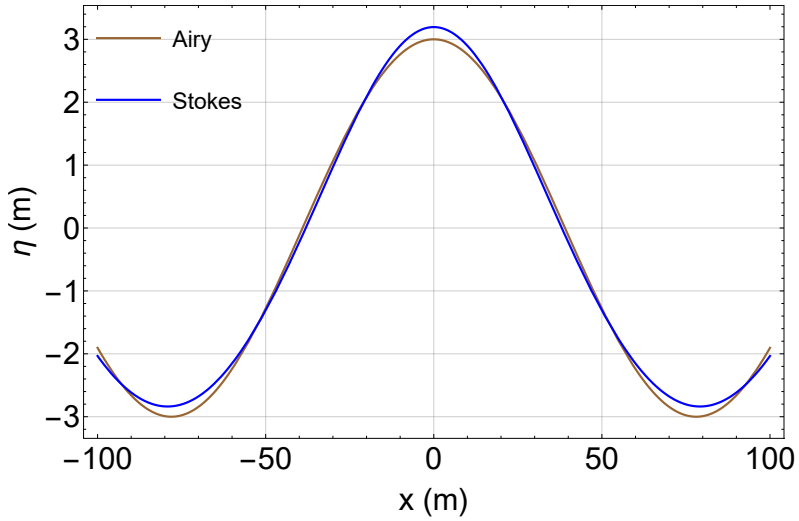

A comparison of the linear (Airy) and the nonlinear (Stokes) water wave shape

Seminar: Mathematical methods of mechanics
Special course: Linear and nonlinear waves

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Waves are one of the most ubiquitous phenomena in nature. Although they are commonly tied to fluid mechanics, waves are studied in many other disciplines (e.g. optics). In this course, we will follow the book of G.B. Whitham "Linear and nonlinear waves", in which waves are roughly divided into two categories: hyperbolic and dispersive. The first got their name from the fact they are formulated using hyperbolic partial differential equation, and the second from the form of their solution (waves of different frequencies propagate at different speeds). The main focus will be on dispersive waves, however some attention will be given to hyperbolic waves as well. The course will be held on Wednesdays from 15:00 to 17:00.

Lectures are intended for a wider audience, including undergraduate and graduate students. A basic knowledge of differential equations is sufficient to follow the course.