1086-01-2633 **Sanja V Pantić*** (pantic@math.uic.edu), MSCS Department, 322 Science and Engineering Offices (M/C 249), 851 S. Morgan Street, Chicago, IL 60607. *Historical survey of solitary wave phenomena.* Preliminary report.

In1840's, mathematicians and scientists from the Royal Society were skeptical, despite Russell's observation, that a permanent, steady-propagating wave could exist on the surface of water. In order to unravel the reasons for their skepticism, we present the science that was available at the time regarding the discovery of solitary waves. We start with Euler's general system of equations that describe the motion of a perfect fluid and then discuss Lagrange's and Laplace's linearized equations for small amplitude waves and the French Academy of Science mathematical prize competition in 1813. We than travels from Paris to Oxford then Leipzig and Edinburgh meeting department chairs and professors, students and their famous tutors who contributed to shaping the mathematical world of fluid dynamics today.

By unifying the language that described wave motion at the time we show why Airy and Stokes doubted and opposed the existence of solitary waves. Then we give arguments in favor of their existence that followed through the work of Boussinesq. We then gave some perspective into different fields that found applications of solitary wave phenomena sometimes independently. (Received September 25, 2012)