

1056-35-681

Samuel Walsh* (Samuel_Walsh@brown.edu). *Stratified steady water waves.*

We will discuss two-dimensional, periodic, stratified, traveling water waves propagating over an impermeable flat bed and with a free surface. The wave's motion is assumed to be driven by surface tension on the upper boundary and a gravitational force acting on the body of the fluid. Such waves are commonly seen to form when, for example, a wind blows over a quiescent body of water. We shall present some new results on the existence of global continua of classical solutions of this type. In the process, we shall also answer some open questions for the constant density case. (Received September 15, 2009)