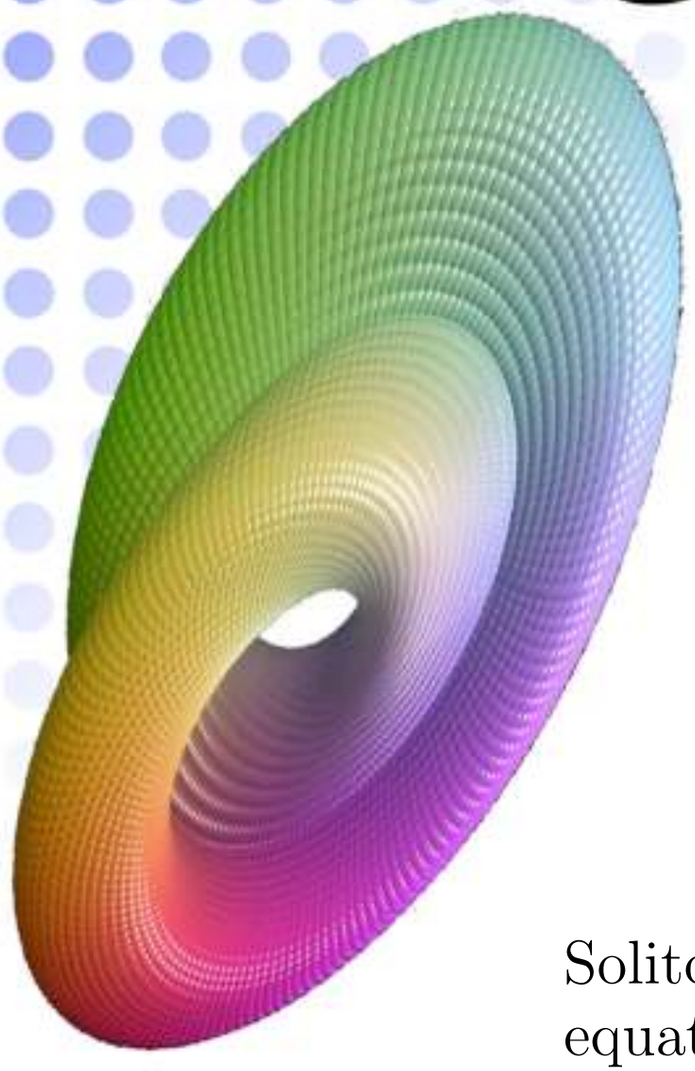
Michigan Math Club

Thursday at 4pm in the Nesbitt Room
Free Pizza and Pop



Solitons

Deniz Bilman

Abstract for
10 November 2016

Solitons are very robust particular solutions of "integrable" nonlinear equations. The name was coined by Martin Kruskal and Norman Zabusky in 1965 to describe an incredible phenomenon they observed in a numerical simulation of the initial value problem for a nonlinear partial differential equation: there were spatially localized structures that propagate by translation (constant speed and constant profile), which preserved their speeds and profiles exactly if they interact (collide) with each other – a particle like property. In this talk, we will describe several aspects of solitons, along with their history and accidental discovery.