Lecture Title: Global solutions of quasi-geostrophic shallow water front problems

Abstract

In this talk, I will introduce the vortex front problem for quasi-geostrophic shallow water equation, which is also known as Hasegawa-Mima equation in plasma science. The contour dynamic equation of the vortex front will be derived, which is a nonlocal, nonlinear dispersive equation. The existence of global solutions will be proved when the initial data is small. This is a joint work with Fangchi Yan.