

MATERIALS WORKING GROUP, Monday Jan 29, 2018

TIME AND ROOM: 10am, WWH 1314

TITLE: Buckling of cylindrical shells from the perspective of the general theory

SPEAKER: Yury Grabovsky, Temple University (visiting CIMS for Spring 2018)

ABSTRACT: It is well-known that rods, plates and shells buckle under compression. Engineering theories describing these phenomena are specific for each particular shape and give little indication of the common mechanisms of buckling that are at work. These mechanisms become apparent when we consider buckling from the general perspective of three-dimensional nonlinear elasticity. The application of such general theory to buckling of cylindrical shells under axial compression has led to a new perspective on the well-documented but still poorly understood phenomenon of extreme sensitivity of the buckling load to imperfections.