



Mathematical Biology Seminar



Monday, January 28, 2019

3 pm – 457 CAB

Meghan Hall

University of Alberta

Tracing Figure Skating Patterns Using the Chaplygin Skate Model

Typically only considered a theoretical mechanical system, the Chaplygin sleigh/skate model is a nearly-equivalent description of a figure skate blade. Work on the Chaplygin sleigh by Bloch, Marsden, and Zenkov, among others, has produced some very complex and intriguing patterns. These patterns have a striking similarity to figure skating patterns that could (theoretically) be replicated by a figure skater on ice. This talk will focus on how using intuitive information from figure skating allows insight into the Chaplygin sleigh and how this can be used to guide and develop novel methods of analysis of the sleigh. There are also possibilities of applying this work to curve recognition, such as handwriting recognition and analysis, that may be more efficient than current methods.

This is joint work with Vakhtang Putkaradze.