1172-35-146 **Xinyang Lu***, xlu8@lakeheadu.ca. *Evolution equations from heteroepitaxial growth.*

Epitaxial growth is a process in which a thin film is grown above a much thicker substrate. A multitude of forces influences this process. In the simplest case, no deposition is considered, and all the interactions are assumed to be purely elastic. However, since the film and substrate are generally made of significantly different materials, with completely different physical constants, such growth leads to a nonuniform film thickness.

The equations governing epitaxial growth are high order, nonlocal, and highly nonlinear. In this talk I will present some recent results about the regularity of solutions, with estimate on the size of their singularities, to several equations arising from heteroepitaxial growth. (Received August 23, 2021)