1106-78-1005 **Kaitlyn Voccola*** (voccola@math.colostate.edu). *Synthetic Aperture Correlation Imaging.*

In synthetic-aperture radar (SAR) imaging, a scene of interest is illuminated by electromagnetic waves. The goal is to reconstruct an image of the scene from the measurement of the scattered waves using airborne antenna(s). A new imaging algorithm, known as correlation imaging, is suggested in which an image is formed of the reflectivity function squared. The algorithm uses what is often called the correlation function in place of the standard slow and fast time data. The correlation function is found via a simple preprocessing step applied to the collected data. A backprojection algorithm is formulated using microlocal analysis. We analyze the ability of the correlation imaging technique to mitigate clutter effects on the image. In addition we consider the case of polarimetric correlation SAR. (Received September 09, 2014)