

1079-44-44

**Raluca Felea\*** (rxfsma@rit.edu), Rochester Institute of Technology, Rochester, NY 14620. *An inverse problem in common midpoint SAR imaging.*

We analyze the microlocal properties of the forward operator  $F$  which appears in common midpoint Synthetic Aperture Radar imaging and prove that it is a Fourier integral operator with singularities. To reconstruct an image, we study the normal operator  $F^*F$  and show that it can be written as a sum of four operators belonging to  $I^{p,l}(\Delta, C_i)$ , where  $C_i$  are local canonical graphs which represent the artifacts. This is joint work with G. Ambartsoumian, V. Krishnan, C. Nolan and T. Quinto. (Received December 02, 2011)