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Margaret Cheney* (cheney@rpi.edu), Dept. of Mathematical Sciences, Rensselaer Polytechnic Institute, 110 Eighth Street, Troy, NY 12180, and **Brett Borden**. *Doppler-only radar imaging*.

In this talk we develop the theory of radar imaging from data measured by a moving antenna emitting a single-frequency waveform. For the case of a straight flight path over a planar surface, we give an approximate reconstruction formula, provide an analysis of the resolution, and show results of numerical tests in a simple case. (Received September 26, 2005)