RADAR INTERFEROMETRY

Richard Goldstein, March 31, 1993

ABSTRACT

This review will be a personalized history of radar interferometry, beginning with the work of A. E. E. Rogers in 1968 to resolve the north-south ambiguity in radar images of Venus. Ground based radars have subsequently used two and three antenna interferometry to produce topography and ambiguity resolution for Venus and Mercury.

Two antenna, aircraft interferometry has been applied to mapping topography, ocean currents, and ocean wave spectra and heights.

One antenna radars can also provide interferometry when they can view the same scene at different times, but at nearly the same viewpoint. Such interferometry has been applied to the Seasat, SIR-B, Magellan and ERS-1 spacecraft to provide mapping of topography, sub-resolution element surface disturbance and millimeter surface displacements.