

## **11.5 FILCOH, A METHOD TO ELIMINATE GROUND ECHOES FOR WEATHER RADARS OPERATING IN MULTIPLE PRT MODE BY USING THE AVAILABLE AUTOCORRELATION COEFFICIENTS**

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This work presents a novel technique to eliminate ground clutter echoes for a weather radar operating in multiple PRT mode. The technique, named FILCOH, takes advantage of the differences in correlation time to separate rain and ground echoes. Basically, the longest time-lag coefficients of the autocorrelation function are used to estimate the ground clutter contribution which is then subtracted from the shortest coefficients before extraction of the geophysical parameters using the classical pulse pair method. Simulation results are presented for 2-and 3-PRT time series achieved in the S, C and X bands, and application results are also presented for real data obtained with i) a single PRT Degreane Horizon wind profiler radar, and ii) an X band weather radar operating in 3PRT mode in Nice (France, Aramis radar network). The application of FILCOH shows a significant improvement in radar reflectivity and radial velocity estimates, particularly for 3-PRT radar data characterized by large ground echoes.