Title of the course:
Under the Hood – How Signal Processing in the WSR-88D Provides the Best Quality Data

Duration: Full Day

Availability to have on-line attendees: Yes

Presenter's name: Rich Ice
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Presenter's name: David Warde
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Presenter's name: Sebastian Torres
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Presenter's name: John Hubbert
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Abstract:
This course introduces the signal processing techniques used to extract weather estimates (base data) in the US NEXRAD program's WSR-88D. Participants will learn what functions this polarimetric Doppler weather radar performs, how it performs those functions, and how engineering and science teams evaluate the quality of the data. The course will explore important functional characteristics of polarimetric Doppler weather radar; and, how key parameters and data quality metrics support forecasting, warning, and climate science needs. Participants will learn about aspects of practical implementation of the requirements and supporting functions, including verification methods. The course includes notes on the historical development of the key requirements and signal processing development associated with the US NEXRAD program with emphasis on research-to-operations (R2O).

Goals of the course:
Participants will learn how basic signal processing can enhance the quality of radar base data estimates and the process to quantify and qualify data quality. Detailed methodologies for analyzing and verifying quality parameters will be included.

Expected background of trainees:
Scientists and Engineers involved in weather radar development and application.