

2.20 INTEGRATION OF RESEARCH WEATHER RADARS INTO ATMOSPHERIC SCIENCE EDUCATION AT PURDUE UNIVERSITY, USA

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Since 2015, the Department of Earth, Atmospheric, and Planetary Sciences at Purdue University has actively integrated research-grade weather radars into its atmospheric science education curriculum in order to enhance student learning and research. This presentation will detail the following activities:

- Installation of Purdues own X-band, polarimetric weather radar (the XTRRA). This installation was achieved at a modest cost (US\$600K) owing to use of existing infrastructure and a competitively priced radar model. The XTRRA serves as a unique source of radar observations in the region, enhancing knowledge of the local atmospheric conditions and augmenting student and faculty research projects across a wide variety of disciplines.
- Revision of the existing Radar Meteorology course to include hands-on activities such as field trips to operational radar sites, the use of mobile radars (e.g., DOW) in lab exercises, and the use of open source radar software (e.g., Py-ART).
- Creation of a new course, Severe Storms Field Work, in which students collect data using mobile radar (among other instruments) in the context of a small severe storm observation field campaign. A novel polarimetric mobile radar was field-tested in this setting during 2018. Survey results are presented showing that the course design, which includes training on and operation of research-grade instrumentation, enhances student learning.
- Participation of undergraduate and graduate students in radar data collection and analysis during larger field projects such as VORTEX-Southeast.

These activities are grounded in an experiential learning framework, and set Purdue University apart from its regional competitors.
