Decision Support and Evaluation for Aviation

Michael Kraus
NOAA/ESRL/GSD

GSD Science Review
3-5 Nov 2015
History of GSD’s Aviation Program

- Model product development team
- Aviation impact variable (AIV) algorithms
- Algorithm quality assessment (QA)
- New QA product development team formed
- NWS in NextGen - support for the forecaster
- Translation of weather forecasts into impacts
Introduction to Session 5

- AWIPS and aviation
- Quantitative verification and impact evaluation
- Focus on event-driven assessments
- Enhance the utility of aviation forecast tools
- Help decision makers utilize uncertainty and probability
Our story

- Assess Aviation Impact Variable (AIV) algorithms
- Understand weather impact on aviation operations, and criteria used by decision makers
- Evolved into development of tools to identify potential weather related impacts
Current QA Research

- Evaluation of AIV algorithms requires new methodologies
- Requires new ways to establish “truth”
- 25 years of experience
Quality

- **Publications** - 9 assessment reports
- **Methodology** is reviewed by stakeholders and developers
  - Invited presentations
- **Assessments** inform decisions on transition of algorithms to operations
- **Expertise** used to develop tools that translate forecasts into impact information
Performance

- Leadership role in conducting assessments
  - GSD is sought out
- Driven by sponsor needs and requirements
- Success gauged by:
  - Satisfaction
  - Effect on operational implementation
  - Continued support
• Weather-Ready Nation: Society is prepared for and responds to weather-related events

• Objective: Reduced loss of life, property, and disruption from high-impact events
Decision support and evaluation for aviation

Aviation Forecasting with AWIPS (Woody Roberts)
Impact-based Decision Support for Aviation (Brian Etherton)
Verification Tools for Aviation Weather (Missy Petty)
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Investigation of Truth Sets for Verification (Laura Paulik)

Assessment of Aviation Algorithms and Forecast Technologies (Matt Wandishin)
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