Time-Specific Hurricane Prediction Visualization by Representative Sampling from Prediction Ensembles

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Previous work – path ensemble display
Display format has a strong effect on strategies for estimating storm damage.

Conditions in recent empirical study.
Time-specific point ensemble display
Point ensemble display with NHC intensity icons
Construction of a Uniformly Distributed (UD) space
Selections of representative subsets in UD space

- Full ensemble
- Subset selected via Orthogonal Least Squares (OLS)
- Subset selected via Weighted Sample Elimination (WSE)
Representative subset display with icons
Interpolated simplicial depth field

Original ensemble
OLS
WSE

Original - OLS
Original - WSE
Summary displays over time by OLS (Hurricane Isaac)

12 hours  
24 hours  
36 hours
Ensemble displays over time with icons by WSE (Hurricane Isaac)

12 hours  24 hours  36 hours
Conclusion

• Showed how well structured time-specific ensemble displays can be constructed
• Allows superposition of storm characteristics
• Empirical study needed to determine efficacy
• Starting work on applying our sampling methods to path displays