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

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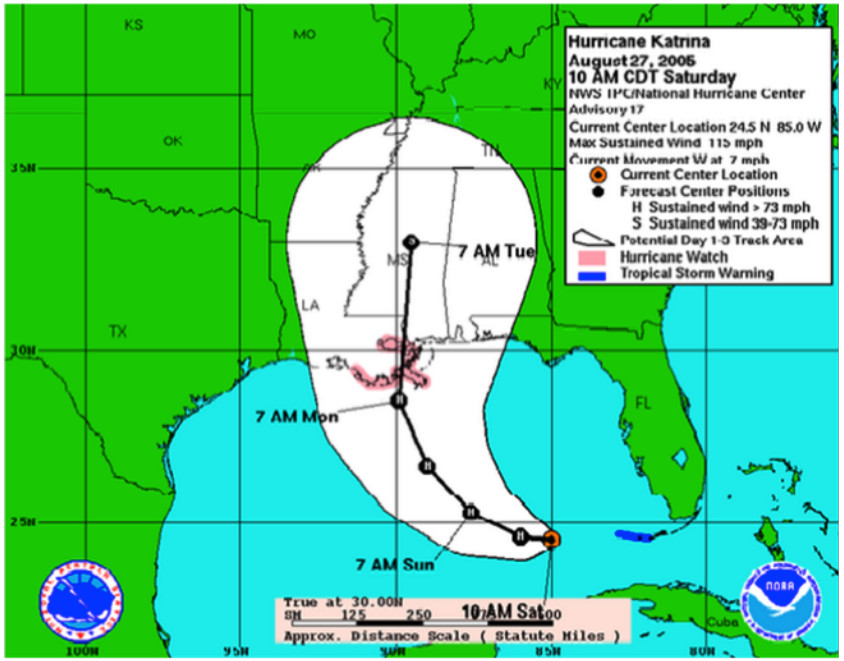
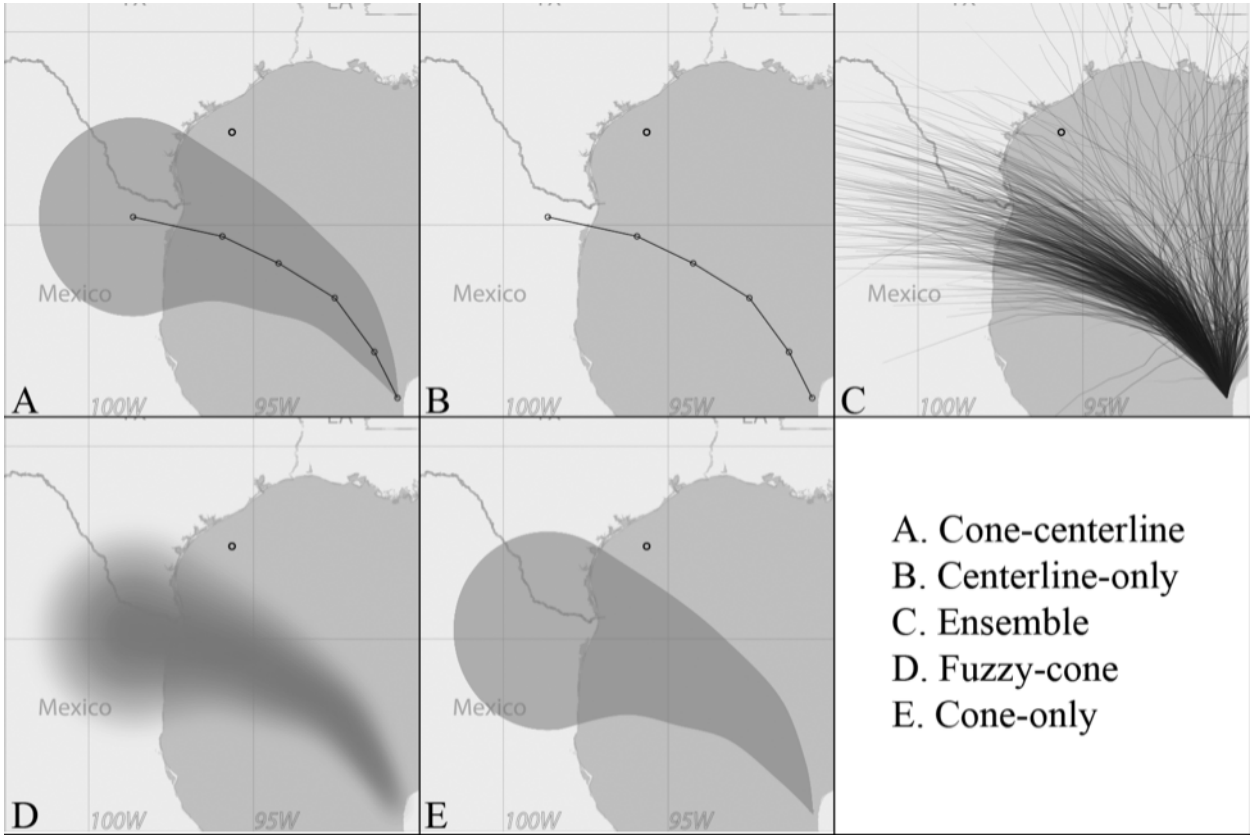
Previous work – path ensemble display

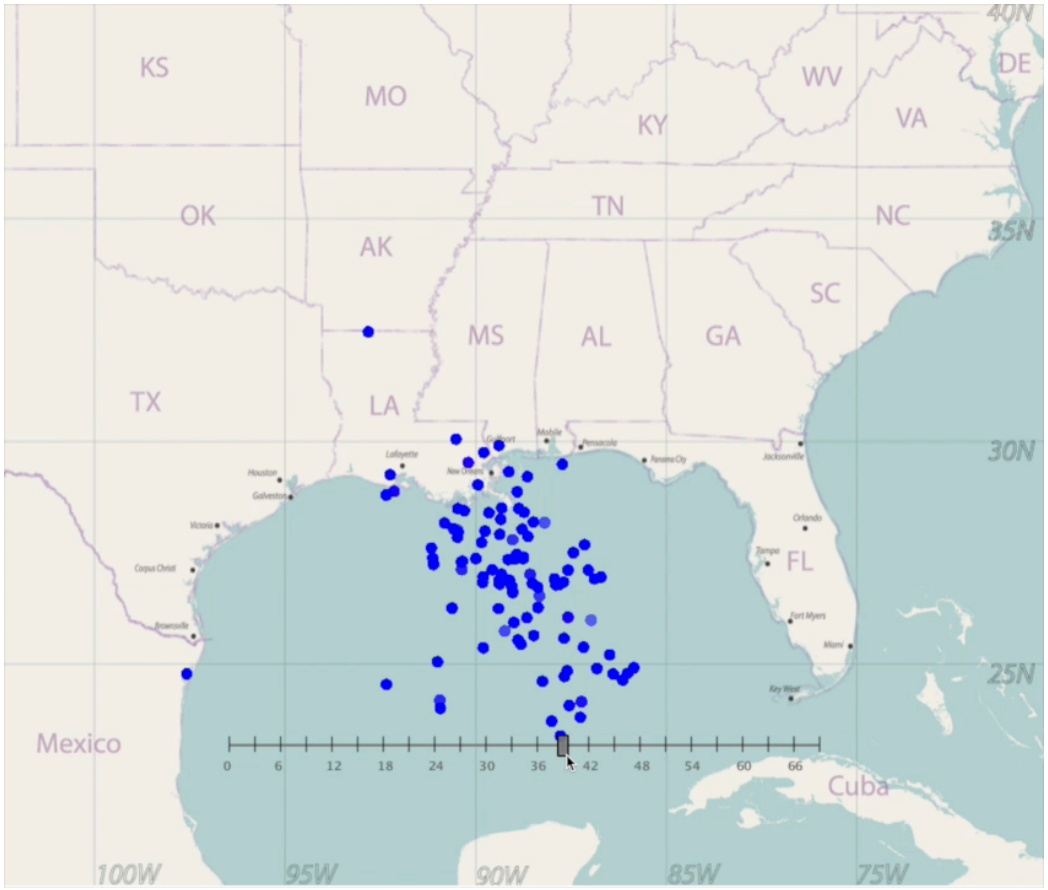


Display format has a strong effect on strategies for estimating storm damage

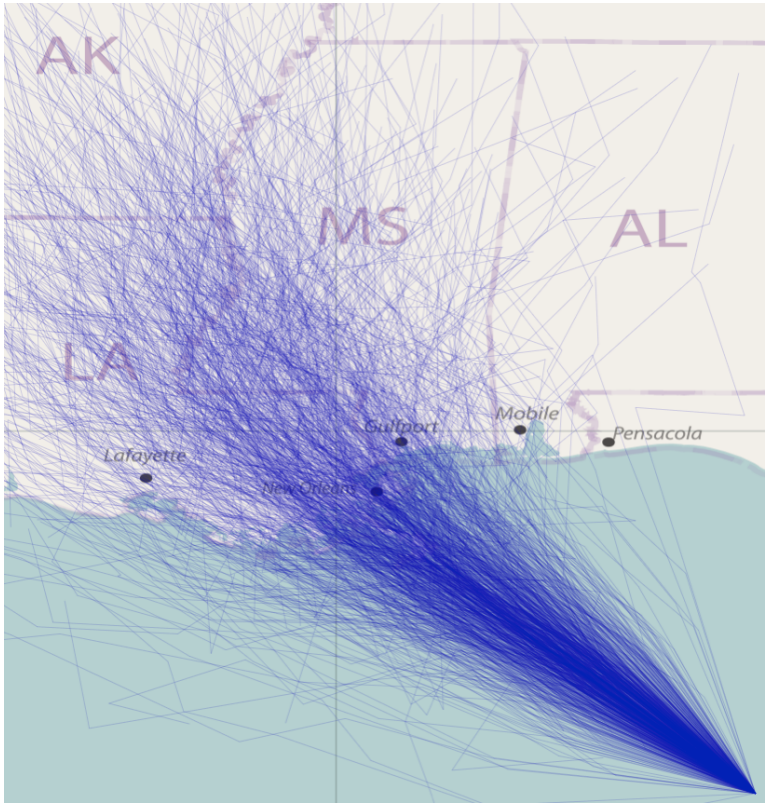


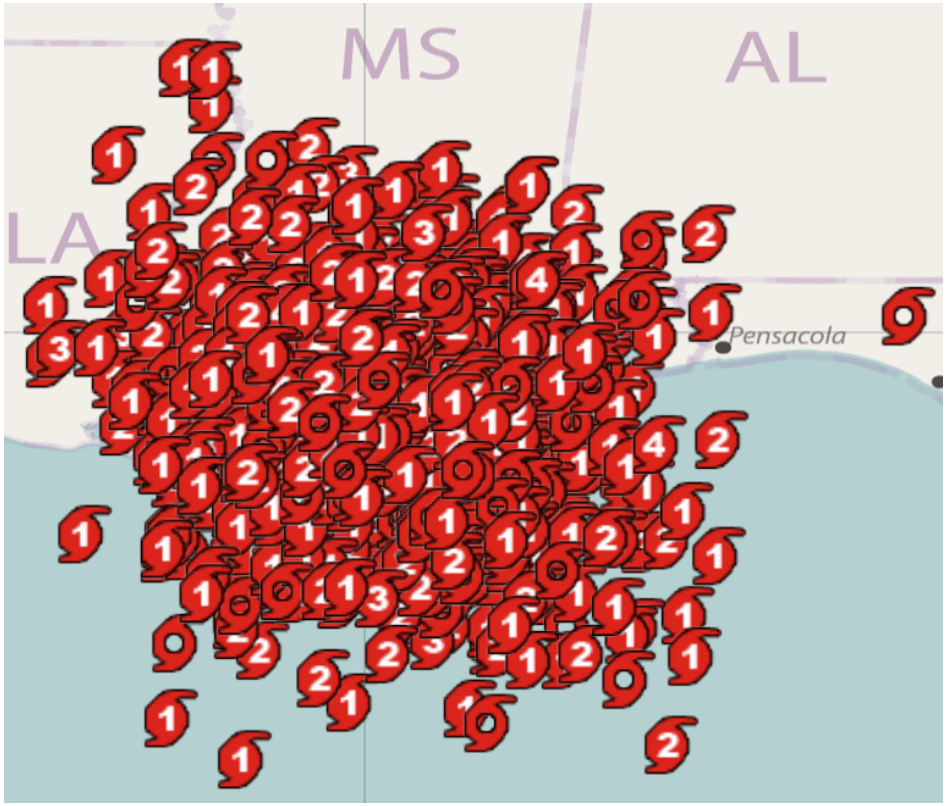
Conditions in recent empirical study

Time-specific point ensemble display

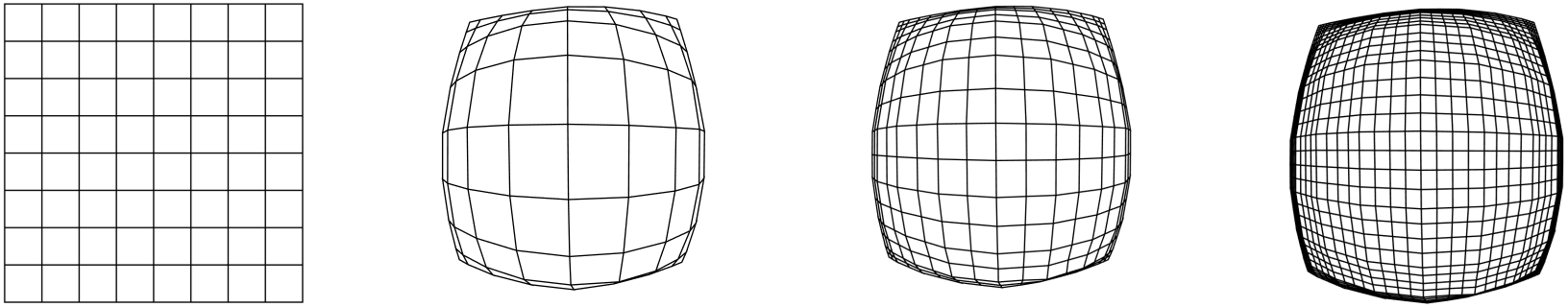


Point ensemble display with NHC intensity icons

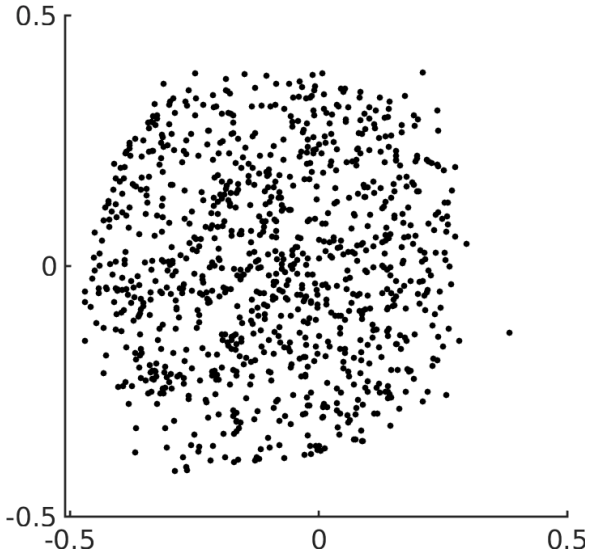




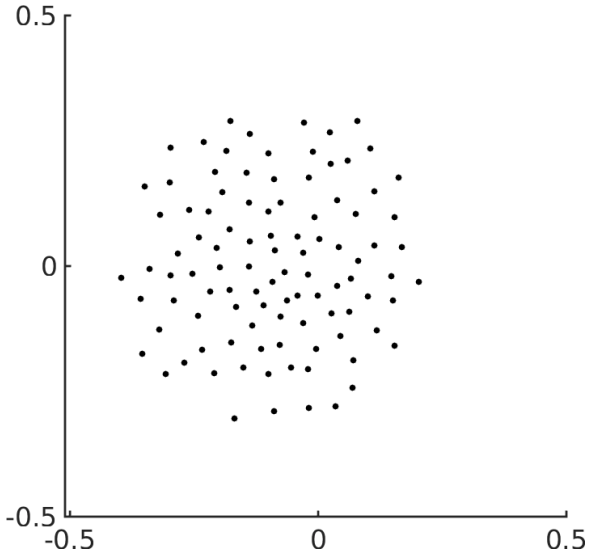
Construction of a Uniformly Distributed (UD) space



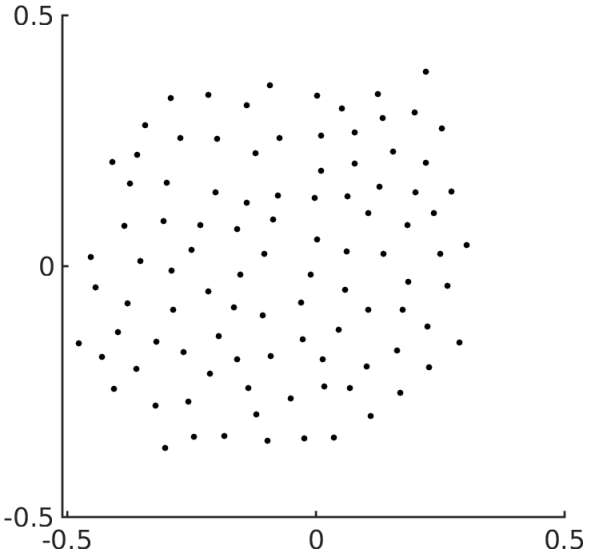
Selections of representative subsets in UD space



Full ensemble

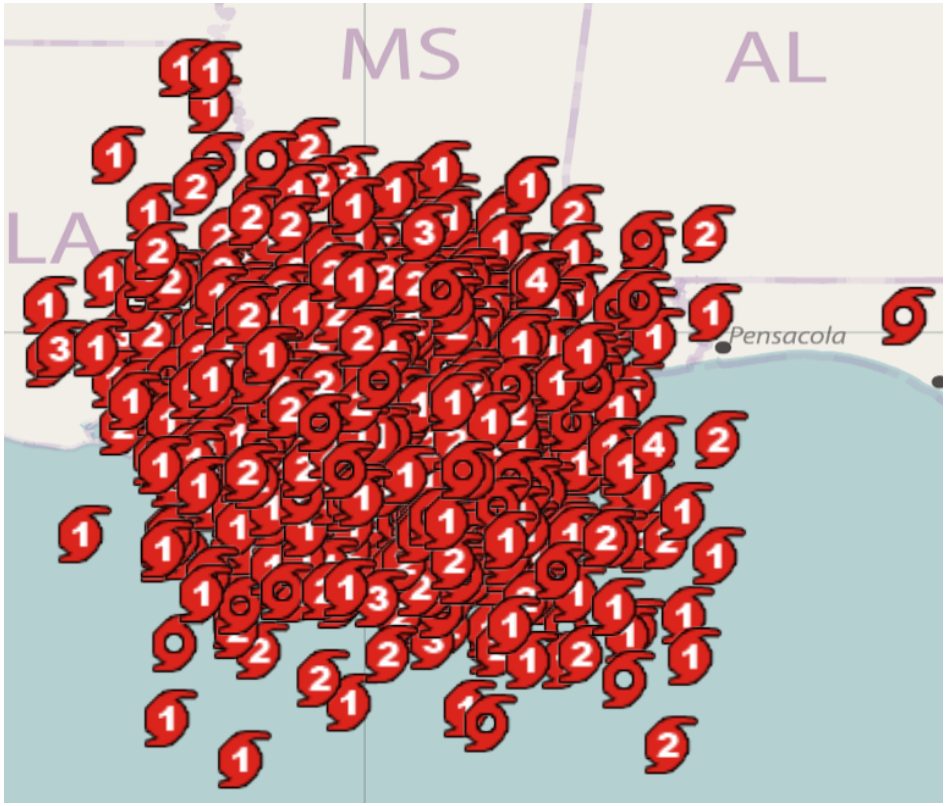


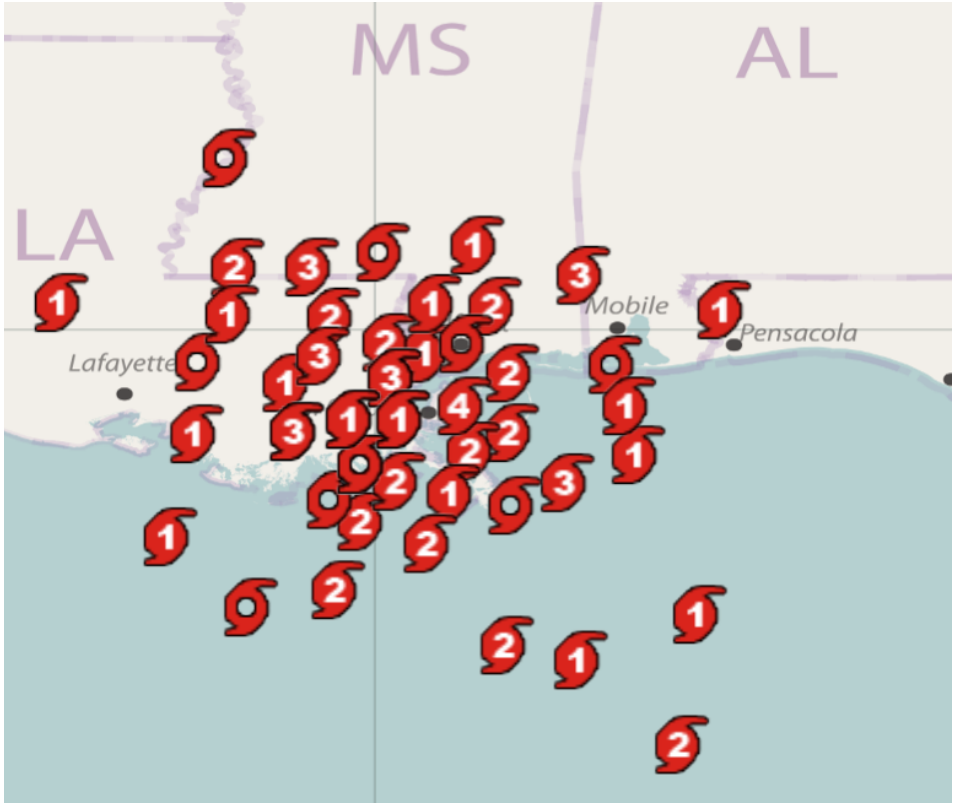
Subset selected via Orthogonal Least Squares (OLS)



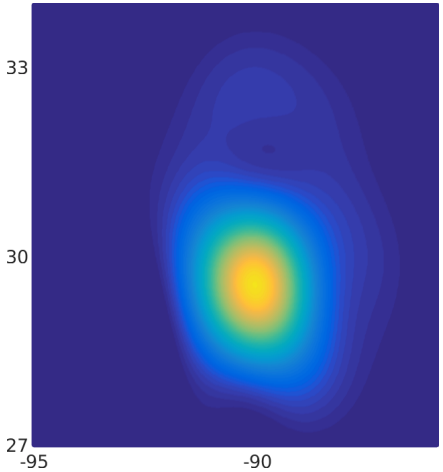
Subset selected via Weighted Sample Elimination (WSE)

Representative subset display with icons

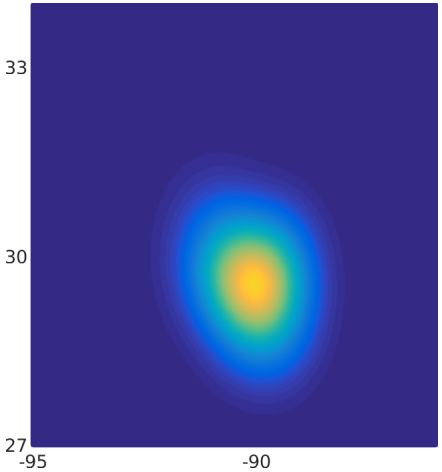




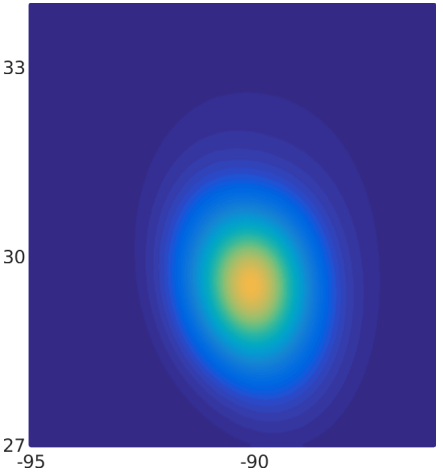
Interpolated simplicial depth field



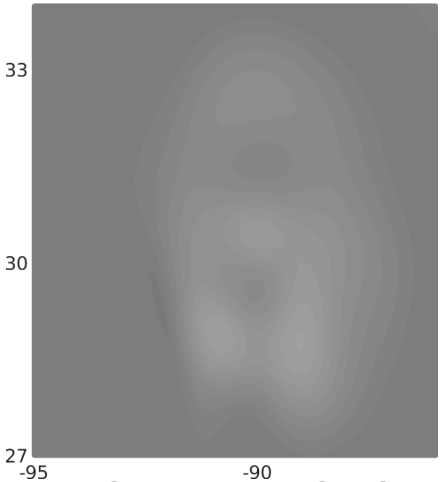
Original ensemble



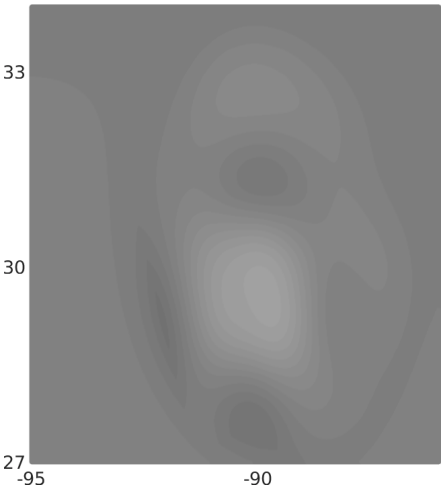
OLS



WSE

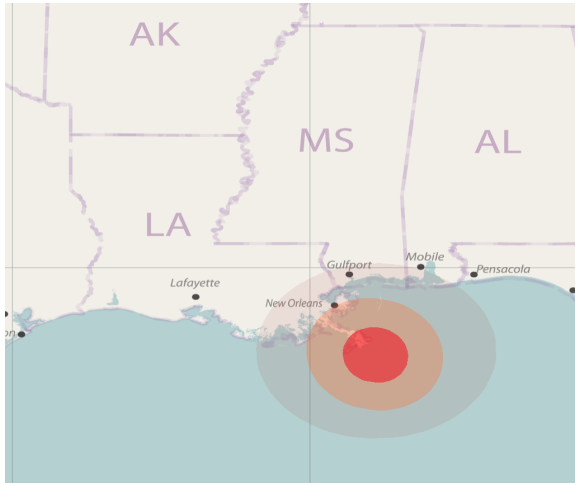


Original - OLS

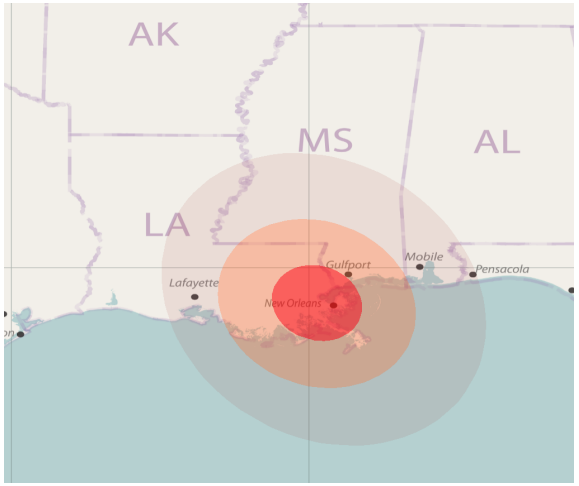


Original - WSE

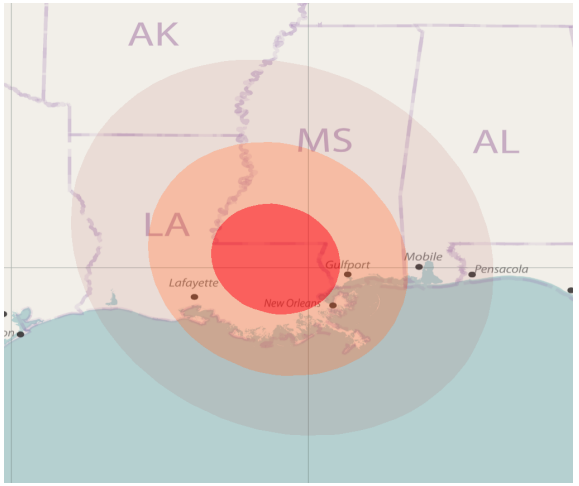
Summary displays over time by OLS (Hurricane Isaac)



12 hours



24 hours

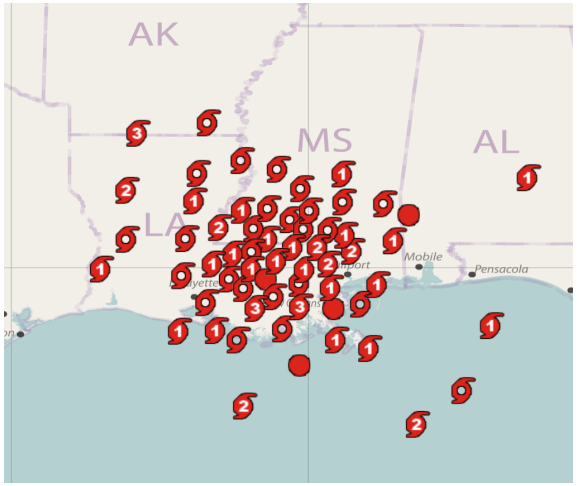


36 hours

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