Identified major issues/selected recommendations:

1. Current Hindrance: Regional models need to get the track forecasts right before they can hope to gain skill in intensity forecasts (not the current case, at least vs. global models)….track and intensity forecasts are related (2-way).
2. The upper-level outflow env – storm scale interaction may be crucial to intensity prediction. We are not observing that very well. Obstacle: Core sat data are traditionally tossed out in oper QC (radiances are cloudy, AMVs don’t agree with background).

Recommendation: Research on better use of rapid-scan AMVs at the storm canopy level; continued to investigate if cloudy radiance assimilation can help in the thinner outflow cirrus regimes.

1. How do we take qualitative imagery (i.e. microwave imagery) and human intuitive reasoning (i.e. Jack Beven) and turn it into objective initializations. Is this testable in simulations?

Recommendation: Investigate the expansion of the TC vitals (output from imagery analysis or derived products, for example) to provide information to the assimilation i.e. eyewall structure/strength/radius, rainbands/asymmetries/shear, system depth.

 Recommendation: Development of a tool so forecasters can articulate their perception of the current state of the storm and to translate into something objective data assimilation can use. Conversely, ask the modelers to produce model imagery of the storm for forecaster evaluation/validation.

1. Other Current Hindrances: Model error covariances for hurricanes are ill posed. Are synthetic obs (bogus) negating some of the data contributions? Model shortcomings (parameterization, radiation, etc) can inhibit or overwhelm effective assimilation.
2. SHIPS uses satellite data parms. How can we mine the parms that make statistical impact in statistical models into the dynamical frameworks?
3. Unused satellite data: MISR winds not being used…for model validation? GOES Vis and SWIR AMVs currently not being used by NCEP.
4. Tropics: WE NEED WINDS FROM SPACE!!