August 2012 TAC, August 29th, 2012

Agenda Item: View recorded Storm of the Month (STOM)

Presentation watched: [July 2012: Small Hail, Big Impacts, and Dual-Pol's Added Value](#)

Comments after presentation:
> **Dr. Snow:** Wanted to show example of how products are being used in the field and to encourage others to continuously review sessions as they are archived.

> **Mr. Vogt:** Mentioned that ROC Applications Branch has created a webpage that has [Multimedia Briefings](#) available.

Agenda Item: Icing Hazard Levels (IHL) Decision Briefing

Presentation

Decision Brief Items:
> Request in Build 14
> IHL requires MLDA changes

Comments after presentation:
> **Alexander, NSSL:** Comment about where IHL works, i.e. @ what level, snow vs. icing.
> **Dave Smalley:** There is more work to be done with this algorithm. Intent is to field the algorithm first then follow-on with future upgrades which will allow FAA to design their systems to accept the product.
> **Dan Berkowitz:** Asked if algorithm distinguishes between clear and rime icing. Lincoln Lab said no.
> **Murnan:** The IHL is a new algorithm but the required MLDA changes has implications for Apps.

Agenda Item: Hail Hazard Layers Decision Briefing

Presentation

Comments after presentation:
> **Dusan:** Had several issues and endorses this first version. ZDR calibration is his favorite topic. Used an analogy of using difference scales to illustrate ZDR calibration issue. Can be resolved given time with KOUN. The HCA uses only one resolution, only one matrix.

What is to prevent a pilot from flying into 50+ dbz? Ricky Keil said nothing after briefing pilots for 20 years. The FAA is working on weather avoidance field which this could end up feeding into the cockpit via their IPAD.

Dr. Snow: Would pilots interpret it only one way?

Smalley: It shows a high confidence region where there is icing. Don't want the pilot to be overconfident that they are seeing all areas of icing. This product would be added to the weather console in the cockpit.

Burgess: Mentioned "SHAVE" is NSSL hail id project that can be made available to Lincoln Lab. NSSL also used DP data with legacy algorithm but was shelved because of funding/interest. Can hand-off to Lincoln Lab(LL) if interested. LL was aware of the program.

Agenda Item: Update on MIT LL Automated Microburst Detection Algorithm.

Presentation

Comments after presentation:

Kelleher: How does this relate to the NSSL detection algorithm?

Burgess: NSSL has an algorithm but it was never installed.

Veillette: This algorithm is separate from the NSSL algorithm.

Agenda Item: Dual Pol Challenges and Opportunities

Presentation

Comments after presentation:

Dusan: We do have software work to do. Looked at bats and could look at moths. Aero ecology group has the ability to give some estimate if it's a life form or not.

Paul: Asked if the HCA has a bio target category. Answer was yes but it usually misses.

Burgess: We have work to do to make the first implementation of this algorithm work and then will still have opportunities to make improvements.

Dr. Snow: There are three DP opportunities: 1) calibration of the hardware, 2) algorithms, 3) lack of understanding, all of which will keep us busy if someone will pay for it.

Bob Lee: Dr. Phillip B. Chilson is a part of our DQ group and we do send material like this to him.

Agenda Item: Update on Clean AP Algorithm

Presentation

Comments after presentation:

Torres: This is not currently being implemented in a build but Sebastian is ready to support an engineering evaluation.

Warde: Question was asked how to implement it. You can put controls in that allow for how to implement cleanAP or GMAP. Did a zone override for CMD and could do the same for cleanup. Status is we're waiting for engineering evaluation b/c it has been delivered to the ROC while cleanAP continues to be developed.

Dr. Snow: What is the current status? Answer: waiting for engineering support from ROC.

Vogt: It's in the ROCs que to do while we devote our resources to getting the most out of DP.

Agenda Item: Update on Staggered PRT

Presentation

Comments after Presentation:

Torres: In response to question about the status of Staggered PRT; we are waiting for engineering support.

Vogt: Priority currently Dual-Pol. Staggered PRT will be compared with other priorities.

Burgess: Need low elevation work to be done first.

Agenda Item: Update on Clean AP for Staggered PRT

Presentation

Comments after Presentation:

Dusan: Completely support this implementation, very good work. Very solid, robust and simple.

Agenda Item: New Radial-by-Radial Noise Power Estimation Technique for the WSR-88D

Presentation – new work/first presentation to the TAC

Comments after Presentation:

Dr. Snow: What's the next step?

A. Free: Have an ECP to evaluate it and implement it in Build 14.

Burgess: Sun spikes will go away and will help with interference.

Dusan: Do you plan if there is no noise at all? May put in a default value or a previous noise value. Recommendation is to use the log of PRT to estimate the noise.

Executive Session:

Decision on Two Decision Briefs:

1. Icing Hazard Levels Decision Briefing: All voted YES

Comments on decision:

IHL is already planned to go into build 14. This one decision effects three parts: 1) It takes the rapid refresh model data and creates a temp, 2) modification to the MLDA, and 3) IHL itself. The only reason to say no would be if the science was not

behind it. Don't think anyone plans to use operationally soon b/c the future improvements are wanted.

2. Hail Hazard Layers Decision Briefing: All voted Yes

More of a standalone algorithm that does require improvement to HCA to get good output from it. Hail algorithm is a big improvement b/c it looks at what's up at altitude vs. just on the ground.

Executive Session Comments on other briefings:

Briefing: Update MIT LL Microburst Detection Algorithm

Microburst algorithm has been tossed around for 15 yrs but we don't know that a request was made to be put into NEXRAD operationally. There is confidence in the algorithm on other platforms.

RECOMMENDATION: Our recommendation is to talk to NSSL to see what the best result could be. Current algorithm originated from TDWRs to tune the coeff to get better performance. The NSSL algorithm supposedly took a different approach. There is some work with phased array that may or may not be useful as well that NSSL could share. Sounds like this algorithm is being re-tuned for the NEXRAD to bring into ops. Request update on the TAC after next.

Briefing: Dual Pol Challenges and Opportunities

Istok: The intent for this briefing was to expose some of the issues that still exist given that the NPI program money is practically non-existent.

Ice: We've been in an anomalous period the last couple years because DP had trouble that tied up ROC resources. Should not be a chronic issue after cross pol. The ROC does need more resources.

Dr. Snow: TAC wrote a letter to the PMC (Paese) to keep the NPI program alive and there was acknowledgement but that's it. Jack Hayes was responsive, but he has since retired. The TAC is unable to control higher-level decisions. We're in for a very rough time fiscally in the future.

RECOMMENDATION: Mike Istok should contact Dr. Phillip B. Chilson about biological targets.

Briefing: Update on Clean AP / Staggered PRT

Ice: We've blessed the science to go forward. It is a technical stroke of genius. NSSL should be commended on the work they have done with limited resources. Just waiting on ROC resources to get it in a future build in accordance with priorities.

Briefing: New Radial-by-Radial Noise Power Estimation Technique for the WSR-88D

Ice: We are currently having issues with noise. When noise is wrong it messes things up. Doing noise monitoring better is a critical thing to do. Recommend pursuing this effort.

Dr. Smith: What computation load is required for doing multiple processing ray by ray in real time? It's running as a prototype already so should be able to tell the TAC.

Dr. Snow: Applaud; continue to work on, looks very promising, novel approach.

General Comments:

Dr. Snow: Recommend TAC agencies review archived Storm of The Month sessions on WDTBs website. Recommend FAA view the APPs Branch multimedia briefings on their website. We will not designate future TAC time to view SOM but wanted the TAC to be aware of what the field is doing with the technology and to keep monitoring it.

Next TAC will be after AMS, sometime during January 29 – 31st in room 3910 at the NWC. Agenda requests can be sent to Lt Col Edens.

Will plan for a WFO to give a presentation at the next TAC especially to explore cases where DP wasn't working so well. A lake effect snow example from Buffalo was specifically mentioned.

Adjourned.