

# Technical Advisory Committee

January 31<sup>st</sup>, 2013

## Agenda Item: Fire Weather & Dual Pol in Operations, Palucki

Comments:

**A. Ryzhkov:** Existing HCA has two non-met classifications. Biological cannot be above the melting layer nor can big drops. The HCA was following its rule set. It does not work with ash. With more cases, we could come up with another non-met classification or two for fires, smoke and chaff.

**D. Zrnic:** “Beautiful” is what I have seen.

**R. Vogt:** Did this data give you situational awareness so the WFO could give better decision-making support?

**Jennifer:** The incident met wasn’t using the data at the time. In hindsight, we found it would be very helpful; DP could be used to assist those fighting the fire.

**D. Burgess:** Was lightning reported during the fire/smoke event? This would’ve accounted for charging. Answer was no.

## Agenda Item: Dual Pol Rainfall Estimates: R(A), A. Ryzhkov, Alexander (Note: Presentation ran long, so the final 8 or 9 slides were skipped.)

Comments:

**D. Burgess:** What are the remaining issues? Remaining Issues with DP rainfall estimates were addressed on the *Issues to be addressed* slide that was skipped because time ran short.

**D. Zrnic:** It does not work in the melting layer.

## Agenda Item: Melting Layer Detection/Vertical Profiles, J. Zhang (Presentation not completed due to time constraints.)

Comments:

**D. Burgess:** Can you use the lowest tilt/angle everywhere or a hybrid scan? Answer: Multiple tilts are used, demonstrated on slide 24 or 26.

**Dr. J. Snow:** What are the next steps? Answer: Improvements for orographic rain and tropical. Right now it’s mainly for stratiform.

**M. Istok:** Referenced slide 35, I believe. What about adding an azimuthal capability to the VPR approach? Something needs to be done to address seasonal differences when ML is lower to ground. VPR will be running on MRMS.

**K. Howard:** This is running on DP radars in experimental phase. It is available to some WFO’s.

**Agenda Item: Update on Cross-Pol, R. Ice, Ice**

Comments:

**D. Zittel:** What is the difference in the reflector bias variation? Answer was .7 to .8 Db

**D. Zrnic:** There is an issue of gain. Current NSSL research is looking at variation. The work is in progress. It is very complicated.

**Dr. J. Snow:** The days when the sunscans were done were the longest days and there was a variation in the results. Wonder if it's a solar effect and not an antennae effect. Radio astronomy could help. Did testing with sun 10-50 degrees elevation. There is the same variation in S-pole.

**R. Ice:** The period of the test occurred during the Winter Solstice, with the shortest days and the sun lowest in the atmosphere.

**D. Zrnic:** How high was sun? Answer was 10 & 15 degrees.

**Agenda Item: NSSL's National Mosaic & Multi-sensor QPE (NMQ), S. Vasiloff**

Comments:

**D. Burgess:** Great stuff, but heaviest snow was further south, in area without radar. What else could be used, sensors/etc., in areas where there is no radar?

**S. Vasiloff:** The approach is you have to have a radar. The area needs more radar. Multiple state/local governments' want additional radar. T. Crum is involved.

**K. Howard:** Need to work with models to get a good estimate. Model data and analysis is needed.

**S. Vasiloff:** Want to have both to compare, to see what works best.

**TAC Executive Session:**

**Briefing: Fire Weather & Dual Pol in Operations, Palucki Comments:**

Comments:

**Unknown Individual:** HCA classifications, they are aware of. Some of their work will address that.

**Unknown Individual:** Is smoke/plume detection currently being worked on?

**K. Kelleher:** Perhaps it is possible to distinguish between smoke and no rain.

**Briefing: Dual Pol Rainfall Estimates: R(A), A. Ryzhkov:**

Comments:

**Telecon Member:** Very excited about it, been looking at it for years. Nice it's finally working.

**K. Kelleher:** Impressed with ability to merge different radars.

**Briefing: Melting Layer Detection/Vertical Profiles, J. Zhang:**

Comments:

**Unknown Individual:** How did they apply technique? It's not clear if it allows for variation in space or has azimuthal resolution. Is it spatially dependent?

**M. Istok:** Works similar to current HCA.

**Briefing: Update on Cross-Pol, R. Ice:**

Next Update: Approximately 6 months

Comments:

**Unknown Individual:** Is it going to work on the NEXRAD system?

**Unknown Individual:** This has taken a lot longer than expected.

**R. Ice:** We've only been working on it full time for about the past eight months. There are differences between operational radars and research radars but some of those differences have been overcome. Previously, we've been dedicated to DP deployment.

**M. Istok:** Will it ever work?

**R. Ice:** We've made a lot of progress. We need to really look at the sun check.

**Unknown Individual:** Have you tried to stop the radar to perform the sun check.

**R. Ice:** We locked the pedestal and conducted tests for the clutter power ratios.

**Dr. J. Snow:** Would like an update in about 6 months. If not making progress, kill it.

**R. Ice:** We have performed radar data collections, we've learned a lot since then beginning.

**M. Istok:** Some radars have a harder time maintaining alignment.

**R. Ice:** Yes, we need to get this into a build test.

**M. Istok:** This is not going to be in a build test until September. We need to think about back-up plans.

**R. Ice:** We are putting it in Build 14.0 and will be conducting field tests in the next year or so.

**Dr. J. Snow:** We will always be subject to the physical/controller constraints of the radars. What we are learning will pave the way to what we will try.

**Briefing: NSSL's National Mosaic & Multi-sensor QPE (NMQ), S. Vasiloff**

**K. Kelleher:** We have been working with the NWS for the past five years trying to get them to use it. Part of the problem is the initial cost to get it set up and where to put it. Sandy Supplemental

included funding for this so NSSL can work on. Multiple agencies supported trying to get this into operations, though no guarantees.

**Dr. J. Snow:** Seems to be an evolving system.

**K. Kelleher:** It's not for the NCEP Fortran environment. Advocated a UNIX based platform.

**M. Istok:** Some may think why do we need the RPG looking at the QPE, if QVS is doing it? Can we rely on the internet during a real weather event?

**K. Kelleher:** Reason for both is loss of coms during a power outage at WFOs.

**Dr. J. Snow:** During a time of tight resources, can we afford to do both?

**K. Kelleher:** If you were to move QPE to a separate system and you do not have reliable communications, you may have a problem. A main problem is that many WFO's don't have a lot of bandwidth. There is a role for both.

**Unknown Individual:** Need more gap filling radars to solve issues.

**K. Kelleher:** May take up to a year at the earliest before MRMS could be made operational. However, once implemented, it would provide some relief to the radar gap issue because you'd have the benefit of overlapping radar umbrellas leading to mosaic radar products and VPR algorithms.

**Schedule for Next TAC:**

The next TAC will be in late April or May.

**Technical Support to be looked into:**

Microphones need to be adjusted.