

Suffern Paul

From: [REDACTED]
Sent: Wednesday, October 16, 2019 4:34 PM
To: [REDACTED]
Subject: Re: MRMS have a HCA overlay field?

As long as there's enough of that in the radar volume for the radar to detect it.

On Wed, Oct 16, 2019 at 3:31 PM [REDACTED] wrote:

Thanks Heather... so that type/or example would fall more under the "graupel" side of things at least from HCA perspective?

Paul

From: [REDACTED]
Sent: Wednesday, October 16, 2019 4:29 PM
[REDACTED]
Subject: Re: MRMS have a HCA overlay field?

Wet snow is melting snow. There is a separate category for graupel.

On Wed, Oct 16, 2019 at 3:26 PM [REDACTED] wrote:

Thanks Heather! This is great information.. do you think "wet snow" is always categorized as melting snow in HCA? While "wet snow" could also be something like say 28 f with snow falling say coming off a marine environment where there could be riming in that environment too? Or will "wet snow" always be the melting snow side of things for HCA purposes at least?

Paul

From: [REDACTED]
Sent: Wednesday, October 16, 2019 4:18 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: MRMS have a HCA overlay field?

We are in the process of incorporating the nexrad HCA into the MRMS experimental system. I can't say when that will become operational, but I can say it won't be before FY2022. That original nexrad HCA has three categories of snow, crystals, dry snow, and wet snow. Wet snow is melting snow. Crystals are pristine, non-aggregated snow whereas dry snow is aggregated snow. I don't know why those names were chosen. We've combined crystals and dry snow into a single category of snow.

Wet snow is a tricky problem. It was very rarely diagnosed when originally implemented and that was by intent of the algorithm developers b/c they didn't have any observations to confirm the top and bottom of the melting layer to aid in the development of those membership functions. Forecasters in the NWS complained about the lack of a melting snow layer between the rain and snow layers, so the Radar Operations Center modified the algorithm to allow for a more generous layer of wet snow. I'm not sure what they did, but I know it wasn't validated b/c they didn't have any data to do it. It was basically a change to stop the NWS field offices from complaining. When the ICICLE data becomes available, we'll try to use data from that to tune the membership functions in the HCA algorithm to have a hopefully accurate wet snow diagnosis.

I'll be briefly speaking about our activities with these things tomorrow. Hopefully that will help clarify what we're doing, but please feel free to ask more questions if you have them.

On Wed, Oct 16, 2019 at 3:03 PM [REDACTED] wrote:

Good afternoon Heather,

Good to hear you on the phone today for this FAA icing workshop. Looking forward to your talk tomorrow morning on the latest with MRMS. We (Sathya and I) have some questions with regards to MRMS and overlay of HCA data. Specifically the "Dry" and "wet" snow bins... We've been reviewing the FAA advisory circular 91-74b and it talks about "wet" snow being a potential icing hazard and "dry" snow being "safe" or "safer". First of all, in the advisory circular the FAA has no definition for "wet" or "dry" snow and so we are tracking that down with the FAA. Still from the aviation hazard point of view and pilots does MRMS have an overlay of HCA for "wet" snow and "dry" snow bins? If so where is that product available? I tried to logon on the MRMS aviation link and it said webpage not available, but I see not part of standard MRMS products at least.

Thanks! Trying to see if there is a way/product already out there to get some type of "wet" and "dry" snow information to the pilot community before they take of... especially at surface to 5,000 ft agl/msl level...

Paul

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