

Model Change Bulletin (MCB) 10 AERMET version 21112 (April 22, 2021), listed by change type

Listed with each change are the affected AERMET stages and data types (Upper air, National Weather Service (NWS), ONSITE, or MMIF¹).

Bug Fixes

Item	Modification	Stage	Data Type
1	Updated mod_AsosCommDates to correct anemometer height for Willimantic Airport from 1.21 to 7.92 m	All	SURFACE
2	Reset convective mixing height to missing if convective mixing height is zero in subroutine CBLHT. Change does not affect AERMOD results as other convective parameters are already missing	3	All
3	Update subroutine OSHRAV to average heights when sub-hourly site-specific data is read	1	ONSITE (sub-hourly)
4	Update format statement for writing missing variables at a level in subroutine UAQASM. Update is to allow 3 digits for the level instead of 2. The change does not affect data output, only reporting of data.	1	UPPERAIR
5	Update MPPBL to initialize the input albedo for subroutine NR_ANG when processing site-specific data when temperature available but no cloud cover or no temperature and no cloud cover.	3	ONSITE
6	Update subroutine RDISHD to not reset missing wind direction to 9990 from 999 in order for AERMET to not replace a valid observation with a missing observation.	1	SURFACE (ISHD only)
7	Update subroutine RDISHD to read the USAF ID in as character instead of integer to accommodate newer stations with non-numeric USAF IDs.	1	SURFACE (ISHD only)
8	Update subroutine RDISHD to check the date as well as the hour for potential duplicate observations to avoid losing an hour on a day when the next observation in the ISHD file is the same hour but a different day.	1	SURFACE (ISHD only)

¹ Unless stated otherwise, changes that affect ONSITE data also affect MMIF output data that is input to AERMET as ONSITE data.

9	Update subroutine OSQACK to only write out 2-digit years to avoid a format overflow when the site-specific data has 4-digit years. This change does not affect data output, only reporting the date to the screen.	1	ONSITE
10	Updated mod_AsosCommDates to correct WBAN numbers for Harriman (54768) and Ann Arbor (94889). Corrected coordinates for Harriman to 42.7 N, 73.17 W. Corrected coordinates for Ann Arbor to 42.22 N, 83.74 W	1	SURFACE
11	Updated mod_AsosCommDates to correct WBAN number for Francisco/Saipan International Airport to 41418.	1	SURFACE
12	Updated mod_AsosCommDates to correct latitude for Challis Airport to 44.52. Corrected longitude for Willow Run to 83.53 W. Corrected longitude for Oneida County Airport to 75.38 W.	1	SURFACE
13	Update MPPBL to only calculate mechanical mixing heights if ONSITE mixing heights are not provided.	3	ONSITE
14	Update SUBST to calculate station pressure from onsite elevation (if available) from standard atmosphere using SURFACE temperature, if available and ONSITE temperature is not available for the hour. This change makes the code consistent with the AERMET User's Guide, Section 5.6, bullet 2(h), page 5-13.	3	ONSITE
15	Updated SUMHF.FOR to check for missing heat flux values when checking for negative heat flux values throughout the day to determine the last convective hour of the day for heat flux integration to calculate convective mixing heights. Previously, AERMET did not check for missing values so a positive heat flux followed by two missing values early in the convective portion of the day could result in a short convective day.	3	SURFACE, ONSITE
16	Updated SUMHF.FOR to only interpolate missing heat flux values for convective hours if the hour is already determined to be convective based on solar angle in MPPBL.FOR. Previously, AERMET interpolated for any missing hour that was next to a convective hour, even if the interpolated hour was stable.	3	SURFACE, ONSITE

17	Updated MPPBL and SMTHZI to check that the previous hour is also the same day as the current hour when smoothing the mechanical mixing height	3	SURFACE, ONSITE
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