

Model Change Bulletin (MCB) 15

AERMET version 26135 (May 15, 2026), listed by change type

AERMET 26135 represents an update of the AERMET code from version 24142. The changes listed in this document reflect changes made to AERMET since the 24142 version. Listed with each change are the affected AERMET stages and data types (Upper air, National Weather Service (NWS), ONSITE (site-specific observed), or PROG (prognostic data).

Bug Fixes

Item	Modification	Stage	Data Type
1	Modified subroutines READ_EXT and READ_1MIN in mod_surface.f90 to correct an inconsistency when running AERMET for an NWS ASOS site with 1-minute data and user entered WBAN does not match AERMINUTE output file WBAN. If running combined stage 1 and 2, AERMINUTE output will be used. If running stage 1 and 2 separately, AERMINUTE output will not be used. The correction to AERMET is to not use AERMINUTE output if the user entered WBAN does not match the AERMINUTE output file WBAN, regardless of if AERMET is run in a combined stage 1 and 2 run or separate stage 1 and 2 runs.	2	SURFACE
2	Modified subroutine ONSITE_INIT in mod_onsite.f90 to correct the name for variable V3NN. In AERMET 24142, the name was incorrectly listed as V2NN. If the user input V3NN into AERMET, AERMET would abort. Note, V2NN and V3NN are unused variables at this time.	1	ONSITE
3	Modified the variable formstr, element 3, in subroutine SFCHAR_SUM in mod_reports.f90 to correct a format overflow for surface characteristics when writing the surface characteristics to the report file. Actual calculations within AERMET are unaffected.	2	SURFACE, ONSITE/ PROG
4	Modified subroutine HEADER in mod_upperair.f90 to correct a format overflow of the upper air station elevation (when $\geq 1,000$ m) when writing to the upper air EXTRACT or QAOUT file.	1	UPPERAIR
5	Modified the subroutine HUMIDITY in mod_main1.f90 to set the variable humidity as	1,2	SURFACE, ONSITE/PROG

	real instead of integer. The variable humidity is defined as real but was being calculated as an integer.		
6	Modified subroutine INPUT_SUMM in mod_reports.f90 to write out correct message to REPORT file when adjust u* option is used. Previous versions of AERMET incorrectly associated the message with the BULKRN option.	2	ONSITE/PROG
7	Modified subroutine WINDS in mod_pbl.f90 to not use a NWS wind observation if the wind speed is not missing and the wind direction is missing, but is not a variable wind observation. This is to correct a bug that lead to erroneous wind measurement heights and u* and Monin-Obukhov length calculations.	2	SURFACE
8	Modified subroutine WINDS and SFC_CHARS in mod_pbl.f90 to use the user-supplied value of the missing wind direction indicator instead of a hard-coded value of 900. Subroutine SFC_CHARS was modified to allow the missing value as an input argument to the subroutine.	2	SURFACE, ONSITE/PROG
9	Modified subroutine READ_ISHD in mod_surface.f90 to correct set the missing value for wind direction to the user supplied value.	1	SURFACE
10	Modified subroutine PBL_PATH in mod_pbl.f90 to correct the ikey reference for the DEF_VPTG keyword. Previously, AERMET was looking for the wrong keyword index.	1	ONSITE/PROG
11	Modified subroutine RH in mod_pbl.f90 to reference correct array index for height in osdata1. Note, RH height is calculated for all scenarios but only needed for COARE processing.	2	SURFACE, ONSITE/PROG
12	Modified subroutine SFC_HEADER in mod_pbl.f90 to not write that the BULKRN method is used when invoking COARE and BULKRN also selected in AERMET control file. When using COARE, the BULKRN method is not used.	2	ONSITE/PROG
13	Modified subroutines CHECK_SURF and CHECK_PROF in mod_pbl.f90 to correct error message codes from E84 and E85 to E85 and E86 for bad surface and profile outputs. Codes now match the AERMET user's guide.	2	SURFACE, ONSITE/PROG

14	Modified subroutine PBL_TEST in mod_pbl.f90 to correct logic when checking for cloud cover substitution and using ONSITE or PROG data.	2	ONSITE/PROG
15	Modified subroutine UP_AUDIT to correct a format overflow for reporting heights to the debug file.	1	UPPERAIR
16	Modified subroutine PBL_TEST to issue an error when the SUBNWS action is not used when using NWS data only for surface data.	2	SURFACE
17	Modified subroutine READ_CD144 to correct the missing value indicator of ceiling height from -99999 to -9999	1	SURFACE
18	Modified subroutine READ_CD144 to correct the input arguments to the subroutine CHECK DUP	1	SURFACE

Enhancements

Item	Modification	Stage	Data Type
1	Increased the length of the FORMAT statement in the AERMET control file from 100 to 150 characters.	1	ONSITE/PROG
2	Modified subroutine DATES_LOC in mod_reports.f90 to include station elevation when writing the summary of the upper air station location	1	UPPERAIR
3	Modified subroutine WRITE_FILES in mod_pbl.f90 to write 4-digit years for surface and profile files.	2	SURFACE, ONSITE/PROG
4	Modified several subroutines to read in a second upper air station and allow substitution of missing upper air data either from the primary upper air station and/or secondary station	1,2	UPPERAIR
5	Added subroutine READ_GHCN in mod_surface.f90 to read GHCN hourly data. Updated other variables and subroutines as needed to accommodate new data type	1	SURFACE
6	Subroutine CHECK_DUP in mod_surface.f90 was modified to check for missing values of total and opaque cloud cover and ASOS sky condition when applicable. Modified subroutines READ_CD144, READ_EXT, READ_GHCN, READ_HUSWO, READ_ISHD, READ_SAM, and READ_SCRAM to call updated CHECK_DUP subroutine.	1	SURFACE
7	Modified subroutines READ_CD144, READ_EXT, READ_GHCN, READ_HUSWO, READ_ISHD, READ_SAM, and READ_SCRAM to not overwrite valid values of cloud cover, dewpoint, relative humidity, station pressure, sea level pressure, ceiling height, wet bulb temperature, and visibility with missing values when duplicate observations for an hour are found.	1	SURFACE

Miscellaneous

Item	Modification	Stage	Data Type
1	Warning message W56 (number of observations for an hour are less than NOBS/HR for sub-hourly site-specific data) changed to W57 in subroutine READ_OS in mod_onsite.f90. Warning message W56 now alerts the user that AERMINUTE data will not be read in.	1,2	ONSITE (Stage 1), SURFACE (stage 2)
2	Modified subroutine PBL_PATH in mod_pbl.f90 to set the variable lbad to true if an invalid keyword is found. This will cause AERMET to abort processing. Previously, AERMET did not abort.	2	UPPERAIR, SURFACE, ONSITE/PROG
3	Modified subroutine OS_PROC in mod_onsite.f90 to reset osvars%readvar to 1 for height variable,	1	ONSITE/PROG
4	Corrected value of variable modnam in subroutine HEADER in mod_surface.f90. Variable is not used at this time	1	SURFACE