What's New with AERmodels

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The development of AERmodels (previously ERCBmodels) for flaring and incineration follows (note, several internal versions may be developed but not necessarily released):

ABlare.xlsm

Version 2.01.240228
- Reconciled differences between AERflare and ABflare combustion calculations
- Corrected properties for combustion products for C2H2 through C6H12
- Corrected reverse lat/lng on oCalmet page row 25
- Corrected obscure bug in reading BigTiff related to support for 2020 GeoTiff. Updated coding of GeoTiff read to include all ESRI modified geographic projection strings.
- Added gas composition updates to be consistent with AERflare
- Bug fixes related to security writing to batch files.

Version 2.01.200311
- Revised receptor grid creation which bypassed the first level. The first level now fills from distance 0m to Xm, with the initial resolution of (default) 20m. This allows the user to specify a 20m resolution to (say) 250m distance when the fenceline only is 100m distance, to catch high concentration near the fenceline.
- Updated land use classification data with North American updated files (circa 2010).
- Updated Datum and projection abilities to handle most transformations. Changed the source location to include datum and projection. These should will be used to transform DEM and LCCC data to user select coordinates.
- Increased speed for LCC data classification and conversion to AERMET
- Increased speed for DEM reading and processing.
- Updated links to DEM data in Canada
- Added entries for specific LCC files using newer large domain files on iBIN page
- Added ability to read European land use classification
- Updated Physical Constants and parameters with GPSA Databook 14 (2016)
- Updated Engines and Turbines parameters with updated list from GPSA Databook 14 (2016)

Version 1.03.180725
- Adjusted processing of user DEM.xyz file for receptor generation as a consequence of changes as per LCC projection
- Corrected internal counter data type to allow for a configuration with 5-years of data as opposed to a individual single years
- Added LCC projection. ABflare now allows for UTM and LCC

Version 1.03.180309
- Optimized the land classification processing to use the area of the LCC polygons within each grid cell rather than point sampling. This removes concern regarding resolution of point sampling and now provides a true average LCC for each grid cell. Additional optimizations reduce computation times especially for large domains.

Version 1.03.180209

- Changed coding avoid false-positives of malicious or suspicious activity during virus scanning when sending by eMail to AER. Removed dead code. Changed coding practice of saving settings to registry to a method that saves settings to a file on windows temp folder. A file "AERTOOLS_Settings_ABflare.ini" is created to save inter-session settings such ViewTechnicalPages, iBin Settings, etc. Each time you open a spreadsheet, it will check if the INI file exists, and if so, it will refresh the settings in the workbook being loaded. If the INI file does not exist, then the workbook will create the file as required to save your settings.
- Updated worksheet names as per AERflare: oCALCFLARE, oBLOWDOWN
- Small bug fixes

Version 1.03.170609
- Bug corrections and updates throughout
- Added DoForEach list processing throughout in user interface to assist in multi-year processing
- Added Domain coordinates to iCOMMON page
- Added map of MM5 coordinates and automatic Coordinates selection to STEP0A CALMET page. Includes user editable coordinates for extraction.
- Added auto-extraction of MM5
- Updated the Create User Receptor file to match AERflare. Includes read DEM, read user xy receptor list, read user XYZ dem file, read user fenceline file, fill fence line, read sources list (to ensure higher resolution receptors are selected with 500m of all sources).
- Added checks on Step1-Metseries to ensure extraction elevations are the same as stack heights on the Step2-ABflare page
- Updated GetFromAERflare processing
- Updated CALMET and CALPUFF default file and settings to match current CALPUFF release
- Updated the ABflare combustion calculations to match changes in AERflare including flare assist and equations of state updates

Version 1.03.161103
- Displayed units for QTOTAL total volume to be flared, STEP2-ABFLARE cell E77, was shown as e3m3/d but should be e3m3.

Version 1.02.160912
- Updated the iBIN page with the new URL of the DEM and LCC data. The field has been change from write protected to user editable.
- Corrected the display of the longitude and latitude on the Step 0b-Receptor page. The utmx/y and lat/long both point to the centre of the domain.
- Corrected writing of CALPUF.inp file bugs for variable NFL2; for exception variable SO2 which can appear more than once and there requires knowing what appears directly before it; METDAT which can write several lines of the same variable

Version 1.02.160613
- Update of ABflare for new CALPUFF 7.x input files

Version 1.02.151005
- Corrected how the LCC.dat file is written to file. The values were written using integer components and therefore the fractional LCC was incorrectly recorded as either 1.0 or 0.0.

Version 1.02.150616
- Corrected reference to old range name on iCOMMON for Datum dropdown selector
- LU.dat used fixed NAR-B datum during test. Changed back to read the datum from iCOMMON.

Version 1.02.150611b
- Corrected missing PtrSafe for DLL call

Version 1.02.141112
- Correction to the print out of LU.dat file. The LU.dat subsampling resulted in an apparent shift of the LU.dat.

Version 1.02.140619
- Updated links to AERflare: NOTE MUST USE worksheet reference, although the range names are workbook referenced the worksheet names are redundant and but must use updated changes for flare_fuelgas, well_lift, and flare_assist from 1=no,2=yes to   1=yes,2=no
- Bug fixes

ABflare Version 1.02.140302
- Release version

ABflare Version 1.01.
- Release candidate version