

Version 3.1

Summary of major changes from LASAT 3.0 to LASAT 3.1

Rated odor components Multiple components of an odorant can be defined for which rated odor hour frequencies are applied to calculate the odor hour frequency of the odorant in the manner specified by the GIRL. The calculation is performed by post-processing with the LASAT tool *LTlopstr* (see below).

Note: The concentration files written out by Lasat contain the un-weighted results for each odor component. The rated result is only obtained afterwards by post-processing with the LASAT tool LTlopstr.

Odorants are defined since LASAT 3.1 by a substance name starting with odor and by setting flag ODOR in file `param.def`. In this case, odor hour frequencies are reported in the LASAT result files instead of concentrations and the output unit is changed to 1 (relative frequencies between 0 and 1).

If flag RATEDODOR is set (the flag implies flag ODOR which can be omitted in this case), odorant components with a name of the form *Name_x* are interpreted as the rated components of odorant *Name* with rating factor $x/100$. The odorant and its rated components must be defined in LASAT in the same substance group and the name of the substance group must start with gas.

The more generalized definition of odorants (as compared to LASAT 3.0) allows to consider more than one odorant – optionally each with different rated components – in the dispersion calculation.

LTools The new group of auxiliary programs called *LTools* comprises a variety of tools which support the user in the preparation of input files for LASAT and the evaluation of LASAT or AUSTAL2000 results. Presently implemented tools are:

- *LTlopstr*: Result evaluation in conformance with AUSTAL2000; applicable also to LASAT projects that are not in conformance with AUSTAL2000.
- *LTloprep*: Result evaluation of files created by *LTlopstr* or AUSTAL2000; the evaluation results are written to a report file like it is done by AUSTAL2000.
- *LTlopser*: Evaluation of time series at monitor points for files created by *LTlopstr* or AUSTAL2000; the evaluation results are written in AUSTAL2000 manner to a report file.

The tools are executed in command-line mode with the program `ltools`.

Total emission The total mass of each trace substance that has been emitted by all sources during the calculation period is written to the end of the log file `lasat.log`.



This information serves for cross-checking, for example if complicated time series of emissions or complex source systems are used.

The mass is not calculated from the input files but internally during the creation of the particles; it thus faithfully reflects what has been applied by the model. Emissions during invalid time intervals (measurement gaps) are fully included in the mass summation.

IBJshape The interactive program *IBJshape* has been extended and re-activated, see the working book for a detailed description.

When reading existing source definitions it recognizes source parameters beside shape definitions and keeps them on saving (in the preceding version they were lost). The resolution (screen size) of the map used to interactively define the object shapes can be adjusted.

Other important changes

- The deprecated source parameters *Lq* and *Tq* are no longer supported.
- For line sources, the heights *H1* and *H2* define the lower edge and *Cq* the vertical extent, in conformance with the definitions for the other source types.
- If the directory for the wind field library is specified by parameter *WindLib* with a tilde (~) as first character, i.e. relative to the working directory, it is automatically created by *Lprwnd*, if necessary, on creation of the library. Otherwise, the directory must be created by the user before the program call.
- An existing wind field is overwritten by *Lprwnd*.
- *Lopgam* checks the consistency of existing auxiliary files *gam0li.dma* with respect to the current grid definitions.

Note: It is recommended to carefully review the updated reference book and working book in order to become familiar with the new extensions and changes.