Dear all,

some time ago we already announced our tracking intercomparison project within HD(CP)2. We already identified a first 2D LES output as data base and like to ask you now to apply your algorithm.

A second 3d and benchmark data sets are envisioned at a later date for those algorithms capable to deal with.

We plan to already present first results at the HD(CP)2 all hands meeting end of this month, so we like to ask you to provide the following output from your tracking routines **until February 16th**:

Please apply your tracking to the liquid water path (LWP) and with focus on LWP >0.05kg/m-2 (if a threshold is applied). For further details on the data set you may directly contact us or refer to the following paper in which the same data set has been used:  
[1] http://www.geosci-model-dev.net/6/1261/2013/gmd-6-1261-2013.html

For the comparison we kindly ask you to store 2 different files in Ascii format, basic statistics and 2 movies (see required output and attached documents).

**Tracking Data Download**

The LES data can be downloaded from:

ftp://visftp.zib.de

http://visftp.zib.de:5000 (web interface)

Your username: HDCP2

Your password: Cloud72Tracking

(Note that the Server runs in passive mode. Connect using "ftp -p visftp.zib.de" or by activating passive mode in your FTP client. Alternatively you can use the web interface)

**Required Tracking Output**

We propose to store the minimal tracking information in two separate \*.csv Ascii files for the complete run (see example files). If you find it necessary to store any additional output, please contact us. If possible, it is beneficial to locally store (but not to upload) object segmentation output of your method for future object-based comparison.

Please also provide some additional information or reference paper on your applied algorithms.  
This may include a brief description of:

* the used object identification scheme
* the applied tracking methodology

**Table 1** characterizes the objects identified and should provide for all time steps the following information in 12 columns

1. Time step (e.g. ranging from 1 to 1819) [uint]
2. Object ID (should be unique for each object per time step) [uint]
3. X coordinate of object center [float]
4. Y coordinate of object center [float]
5. Size of object (=number of grid boxes included) [uint]
6. X\_min (minimal X location of the object) [float]
7. X\_max (maximal X location of the object) [float]
8. Y\_min (minimal Y location of the object) [float]
9. Y\_max (maximal Y location of the object) [float]
10. Mean LWP of the object (=average value of LWP for all grid boxes included) [float]
11. Min. LWP of the object (=smallest LWP value included) [float]
12. Max LWP of the object (=maximal LWP value included) [float]

**Table 2** should contain the tracking information for all time steps (rows) in 4 columns:

1. Basis time step t\_i (e.g. ranging from 1 to 1818) [uint]
2. Object ID identified in time step t\_i (from Table 1) [uint]
3. Object ID of identified successor object in time step t\_i+1 (from Table 1) [uint]
4. Weight factor to decide object relevance after split/merge event for life time statistics (optional), e.g. transition probability or overlap ratio

**Plots of Statistics**

1. Plot Number of objects versus size of objects (size=number of grid cells)
2. Plot Number of objects versus average LWP
3. Plot Time step versus Number of objects
4. Plot Number of objects versus life time   
   (note: object 'life-time' should be added to the larger object in case of a split, if poosible)

If possible, further plots (see [1]) are welcome. We are planning to provide further analysis and comparison based on the two Ascii output files.

**Movies**

1. Showing in each time step the tracked objects (marked with different colors)

**Please contact us in case of any questions or problems and let us know if you plan contribute or not!**

Thanks a lot!!

Kind regards,

Silke and Alexander