OVERWIEV OF PRECIPITATION, SNOW COVER, WET DEPIOSITION, BULK WET DEPOSITION, THROUHGFALL DEPOSITION AND STEMFLOW DEPOSITION REPORTED TO NEU

GENERALLY

Snow Depth

- Only 4 stations report Snow Depth: Hy, Lo, Oe and Sp. Probably the snow is not common for the stations left (as in Bugac where we practically did not have significant snow cover from 2006).

Remarks for Master Data Template:

Methodology

- description of methods for chemical analysis of nitrate and ammonium is missing (no cell for description)

WMS Wet Deposition

- Column C and F

Bulk Precipitation Amount INSTEAD OF ***Total Bulk Deposition*** and ***Wet-only Precipitation Amount*** INSTEAD OF ***Wet Deposition*** because precipitation in mm is not deposition itself. Anyway ***C, F, I, L*** columns are not necessary; precipitation amount alone gives not additional information without concentration data. Participants use this figures to calculate deposition by multiplying concentrations by rain rate. Some stations report wrong data for Bulk/Wet, Throughfall and Stemflow Deposition probably as a consequence of wrong calculations. If measured concentration were reported we would be able for quality check.

- Units in Line 9***: g/m-2/y*** is wrong unit, ***g/m-2*** actually means ***gm^2*** better to use: ***$gN/m^2/y$*** much better: ***$g\ N\ m^{-2}year^{-1}$***. To express short (e.g.) daily deposition rate concerning a ***year*** is strange, but not impossible. In this case the arithmetic "mean" of individual values gives the yearly deposition in case if reported deposition rates cover the same sampling intervals (e.g. exactly for one day or for one week) and there are no gaps between reported periods, otherwise gaps have to be taken into account. (e.g. reports for 32 daily figures in a half year, we have to multiply the averaged rate by 32/183). However, there are reports with uneven periods in the same half-year (i.e. data refer to different length of exposure time). For this, in calculation arithmetic mean, data for longer period have higher weight. I recommend using ***$mg\ N\ m^{-2}$ per reported period***. By this, error in averaging can be excluded and the yearly deposition rate can be calculated as the sum of the column. If the reported period is not complete, a simple gap filling can be used for a half of year as: ***deposition = sum of column*181 or 184/length of reported period (days).*** If we remain at unit ***$g\ N\ m^{-2}year^{-1}$*** yearly depositions can be calculated by weighting the data by the length of exposure time.
- Bulk deposition figures can be treated with caution. Theoretically the sedimentation of coarse particles gives positive error in ionic concentrations but fortunately the share of ammonium and nitrate are minimal in this range. But applying longer exposure time for bulk sampling makes the quality of data questionable. The open rain gauge unattended for one month is a source of different pollution effects (insects inside, evaporation of water, transformation of

components, bird dropping, falling plant residues etc.). The wet-only gauge by frequent clean of funnel and frequent sampling (short interval, 1-2 days) gives reliable data. It can be considered in the evaluation.

Data Week Month Seasonal

- Parameter type (line 3) and parameter (line 6) are not correct. The ***wet deposition and throughfall*** and ***bulk wet deposition*** are of the same category, these three deposition forms are mixed here, however there is only on column to report . The precipitation measured in ***mm*** is not deposition as I mentioned; it is precipitation amount. Monthly bulk precipitation amount should be reported here, but there is still a column for it in ***WMS Wet Deposition, column C.*** Why should we report two times the same parameter? Anyway monthly data are required but almost all of the stations use different periods. Suggestion: ***Parameter type: meteorology, Parameter: bulk precipitation amount***, but this column is redundant with ***WMS Wet Deposition column C.***

Methodology:

- ***Bulk Wet Deposition*** marked by wrong unit, ***BWD*** it is not expressed in ***mm*** but in ***gN/m2year***. There are not lines for ***Wet-only Deposition, Througfall Deposition and Stemflow Deposition.*** If this line intended to ***Bulk Precipitation***, call it this way and change the reported period cause each stations uses different time intervals. Lines also needed for ***Wet-only***, ***Througfall and Stemflow Precipitation*** amounts (mm).

REMARKS TO REPORTED DATA

Auchencorth

- Did not report Bulk Wet Deposition or Wet Deposition data at all

Bugac

- Did not report Wet Deposition data for 2006, 2007/1, 2008/2
- Did not report 30 min precipitation data for 2008/2

Castellaro

- Did not report Bulk Wet Deposition or Wet Deposition data for 2006, 2007, 2008/2. Different length of period is given, averaging gives false result.
- Sampling method is not described.
- Wet-only and bulk values differ by one order indicating the sampling error using appr. one month exposure time.
- Did not report 30 min precipitation data for 2008/2

Easter Bush NE and SW

- The two stations report the same parameters for precipitation and deposition
- WMS Wet Deposition:
    - - Cell B22 2009 INSTEAD OF 2008

- - Bulk Wet Depositions are higher by 2-3 magnitudes as expected, probably wrong calculation. The 30-70 gN/m^2y nitrate refers to 100-300 mg/l in solution, or 300-700 kg N/ha*year nitrate load that is impossible.

Gebesee

- Bulk Wet deposition data for 26/03/2007-10/04/2007 and 24/04/2007-28/05/2007 are too high, probably samples are contaminated.
- Different length of period is given, averaging gives false result.
- Did not report Bulk Wet Deposition data for 2008
- Did not report 30 min precipitation data for 2008

Grignon

- July 2007 30-minute precipitation amount is missing.
- Did not report Bulk Wet Deposition or Wet Deposition data at all.
- Did not report 30 min precipitation data for 2008

Höglwald

- Did not report Bulk Wet Deposition or Wet Deposition data at all
- Did not report 30 min precipitation data for 2008/2

Hyytiala

- MS Wet Deposition: Wet Depositions are probably reported at wrong place. It is Blk Wet Deposition cause in the ***methodology*** they reported a tipping bucket for sampling
- Did not report 30 min precipitation data for 2008/2
- The bulk precipitation amount is sometimes lower than throughfall one. What is the reason for that, leaching of snow? Theoretically bulk precipitation is higher because of interception.
- Througfall deposition rates (e.g. in 2006) often lower than bulk deposition. It is strange and can be explained if plant uptake of nitrogen higher than the dry deposition. Other stations report always higher througfall depositions than bulk.
- First half of 2007: no snow, or not observed, or not reported?
- Did not report Bulk Wet Deposition, Throughfall Deposition and Stemflow Deposition data for 2008. Data are not complete; data for some periods are missing.
- Different length of period is given, averaging gives false result.

Lompolojankka

- Bulk Wet Depositions are reported but using NILU wet-only sampler it seem as if it would Wet (Only) Deposition.
- Did not report Wet Deposition data for 2006, 2007/1, 2007/2.
- Reported WD data for 2007/2=0

Oensingen

- Wet Deposition reported in different units gN/ha, and from 2008 in gN/m^2year. If we recalculate from gN/ha into gN/m^2year, the two series of data are not consistent (one order difference). Calculation?
- Wet Deposition of nitrate missing in Sep-Dec 2007 and June-December, 2008
- Different length of period is given, averaging gives false result.

Piana de Sele

- Did not report Bulk Wet Deposition or Wet Deposition data at all
- Did not report 30 min precipitation data for 2008

Soroe

- Bulk Wet Deposition, Throughfall Deposition, Stemflow Deposition: only one figure available for 2006 and 2007/1?
- Different length of period is given, averaging gives false result.
- Did not report BWD, TF, SF deposition for 2008/2
- ***Stemflow Deposition*** is probably overestimated by 2 orders, for ammonium. Reported ***Stemflow Deposition***s are frequently higher than ***Throughfall Deposition***. Stemflow is generally negligible. Calculation in stemflow volume to mm rainfal?

Speulder

- Bulk or Wet only Depositions are reported? Both can be read in column C (WMS Wet Deposition)
- Too many data are missing; yearly deposition calculation is impossible
- Bulk Wet Deposition is too low compared to Troughfall. Check calculation!