

<b>Title :</b>	Emission Processes and Upscaling	
<b>Time :</b>	Oct 26 <sup>th</sup> 9:00-10:30	
<b>Chair :</b>	Klaus Butterbach-Bahl	
<b>Attendees :</b>	21 (see complete list below)	[Partner]
<b>Minutes by :</b>	Eugenio Díaz-Pinés	[partner]

### Aim

Discussion of strategies for activities within WP 2.  
Clarification of activities for WP 3 and of relationships with WP4 and WP6

### Presentations

As chair of the session, Klaus gave a small overview on the topics for discussion within the session.

Sophie Zechmeister-B. explained briefly her incubation experiment (WP 2.1). It will be similar to the approach used in NitroEurope. By means of an automated incubator, N<sub>2</sub>O/NO/CH<sub>4</sub>/CO<sub>2</sub> efflux from intact soil cores will be analysed at different temperature and soil moisture status. With the results, we expect to provide response functions for environmental condition changes (parameterization). This information will be available for modelers in order to improve such models. See below for specific details.

Klaus Butterbach-Bahl and Eugenio Díaz-Pinés described briefly the activity of WP 2.2. With focus on Mediterranean soils, the aim of the experiment is to assess the influence of drying-wetting effects on NO/N<sub>2</sub>O pulse emissions. CO<sub>2</sub>/CH<sub>4</sub> will be also analysed. The objective is also to provide functions to improve models (WP 3)

### Topics discussed with Issue, decisions/conclusions and actions

Issue: Parameterization of GHG emissions (WP 2.1 Zechmeister-B)  
Decision: Start in April 2012, Wim Site, 4 temperature and 4 soil moisture levels  
Action: Sophie will ask in advance the site managers to ship intact soil cores from the sites for incubations in Vienna (BOKU).

Issue: Drying-wetting effects on NO and N<sub>2</sub>O emissions (WP 2.2 Butterbach-B)  
Decision: Interest in agricultural soils. Measurement of NO/N<sub>2</sub>O/CH<sub>4</sub>/CO<sub>2</sub> and maybe NH<sub>3</sub> and N<sub>2</sub>. Inclusion of different drying/wetting cycles, temperatures and fertilization loads.  
Action: Focus on one site (Grignon or Brescia). Still to be decided.

Issue: Inclusion of fertilization effects on parameterization of GHG emissions (WP 2.1 Zechmeister-B)  
Action: Sophie will likely try it in only one site (Grignon/Brescia)

Issue: Inclusion of NH<sub>3</sub> measurements in the lab incubations  
Decision: Feasibility in the lab still has to be proved  
Action: Benjamin Loubet will send around a protocol on measurements of NH<sub>3</sub> by trapping in acid solution

Issue: VOC emissions (WP 2.3)

- Decision: No involved persons are present. Topic already covered in a previous session (C2).
- Issue: Clarification of activities within WP3.1 (Theobald)  
Decision: WP3 tasks only include slurry application effects on NH3 emissions. WP6 is looking at more sources  
Action: Close communication and combined work between WP 3 and 6 is needed
- Issue: Bi-directional exchange assessments and vegetation (WP 3.2 Loubet)  
Decision: Likely use of VOLTAIR model. Link needed with WP4.
- Issue: Uncertainty assessments (site/regional scale)  
Decision: Uncertainty needs to be reported  
Action: Groups providing algorithms are asked to provide uncertainty estimates for parameters in order to estimate model uncertainties

### Decisions

A draft for the time schedule of future activities was drawn (please note is tentative)

Action	Due	Who
Workshop State of the Art – Detailed outline of the work	Month 6	
Summary report for site applications	Month 24	
Improved parameterization NH3/NO/VOC	Month 30	
Provision of site based estimates for NH3/NO/VOC exchange rates for ECLAIRE core sites	Month 44	

### Complete list of attendees

Klaus Butterbach-Bahl (KIT)  
Pierre Coheur (ULB)  
Raia Silvia Massad (INRA-Grignon)  
Abert Bleeker (ECN)  
Pierre Cellier (INRA-Grignon)  
Benjamin Loubet (INRA-Grignon)  
Mark Theobald (UPM)  
Stefan Reis (CEH)  
Eugenio Díaz-Pinés (KIT)  
David Simpson (MET.NO)  
Martin Schamp (TNO)  
Taina Ruuskanen (UHEL)  
Massimo Vieno (NERC)  
Rainer Gasche (KIT)  
Sophie Zechmeister-Boltenstern (BOKU)  
Yasmine Nyndi (ULB)  
Ole Hertel (AU)  
Camilla Geels (AU)  
Carsten A. Skjoth (AU)  
Laslw Horvath (FRI-HMS)  
Tamas Weidinger (ELU)