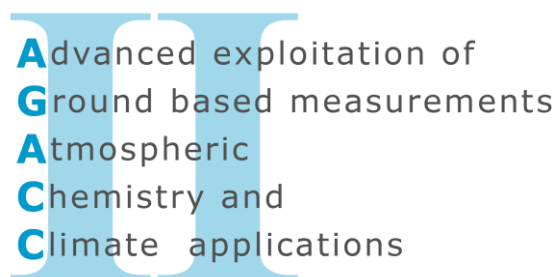


AGACC II



Minutes of First Meeting with Follow-Up Committee

September 29th, 2011

BIRA-IASB, Brussels

1. Location

The meeting took place in the meeting room “Salle Méridienne / Meridiaanzaal” of ROB (Royal Observatory of Belgium), 3 avenue Circulaire, 1180 Uccle, Brussels, Belgium. The ROB is located at the Space Pole, as well as the BIRA-IASB building.

2. Participants

Participant name		Institute short name	E-mail	Function(s) in project
Müller	Jean-Francois	IASB-BIRA	jfm@aeronomie.be	Member of Follow-Up Committee
Coheur	Pierre-François	ULB	pfcoheur@ulb.ac.be	Member of Follow-Up Committee
Maenhaut	Willy	UGent	Willy.Maenhaut@UGent.be	Member of Follow-Up Committee
De Maziere	Martine	IASB-BIRA	martine@oma.be	Coordinator & Promotor
Van Roozendael	Michel	IASB-BIRA	michel.vanroozendael@aeronomie.be	Promotor
Vander Auwera	Jean	ULB	jauwera@ulb.ac.be	Promotor
Mahieu	Emmanuel	ULg	Emmanuel.Mahieu@ulg.ac.be	Promotor
Hermans	Christian	IASB-BIRA	christian.hermans@aeronomie.be	Scientist
Pinardi	Gaia	IASB-BIRA	gaia.pinardi@aeronomie.be	Scientist
Desmet	Filip	IASB-BIRA	filip.desmet@aeronomie.be	Scientist
Vigouroux	Corinne	IASB-BIRA	corinne.vigouroux@aeronomie.be	Scientist
Demoulin	Philippe	ULg	demoulin@astro.ulg.ac.be	Scientist
De Bock	Veerle	KMI-IRM	Veerle.DeBock@kmi-irm.be	Scientist
Mangold	Alexander	KMI-IRM	Alexander.Mangold@meteo.be	Scientist
Delcloo	Andy	KMI-IRM	Andy.Delcloo@meteo.be	Scientist
Tudorie	Marcela	ULB	mtudorie@ulb.ac.be	Scientist
Foldes	Tomas	ULB	tfoldes@ulb.ac.be	Scientist
Vanderstraeten	Martine	Belspo	vdst@belspo.be	Belspo program officer

3. Agenda

9:00 Welcome with coffee / tea

9:30 Introduction by M. De Mazière, Coordinator

- Goal of the meeting
- Presentation of Follow-Up Committee and partners
- Summary of the project

10:00 Partners presentations

- KMI-IRM V. De Bock (20')
- ULB J. Vander Auwera (20')
- ULg E. Mahieu (20')

11:00 Coffee/tea break

11:30 Partners presentations cont'd

- BIRA-IASB
 - o UVVIS team M. Van Roozendael (20')
 - o IR team C. Vigouroux – F. Desmet (20')

12:10 Discussion with Follow-Up Committee
12:45 End of meeting
Sandwich lunch together with BIOSOA team and Follow-Up Committee.

4. Minutes

4.1. Introduction by M. De Mazière, Coordinator

See presentation: 1_AGACC-II_First_Meeting_Introduction_MDM

Martine De Mazière briefly explains the goal of this meeting. A half year after start of the project, the first results can be shown to and discussed with the Follow-Up Committee. Unfortunately only a few members of the Follow-Up Committee have been able to join us. She presents the members of the Follow-Up Committee.

AGACC-II will build further on the results of AGACC-I. Martine presents the heritage of AGACC-I. She shows the measurement sites at Ukkel, Jungfrauoch and Ile de la Réunion on a map. She reminds us all three are NDACC stations. She then summarizes and briefly explains the four objectives of the project. Each of the four objectives corresponds to a workpackage (WP). The fifth WP is outreach. She lists the different means of communication and contribution to the scientific community.

She summarizes the expected results of the project: provide new data, deployment of additional monitoring instruments, development of expertise especially in Central Africa, etc. She points out that the outcome of the project should reinforce the role of Belgium in international monitoring and atmospheric research programmes.

Martine shows the agenda for the rest of the morning and suggests a few ideas for discussion.

4.2. Partner presentation: KMI-IRM by V. De Bock

See presentation: 2_AGACC-II_First_Meeting_RMI_VDB

Veerle De Bock presents the contributions of RMI. RMI will mainly contribute to the third workpackage. They will combine observations from several ground-based remote-sensing instruments at Uccle to get a more comprehensive data set of aerosol properties. She lists the different instruments and the corresponding work to be done. WP 3 also includes modelling work with Chimere and Opac, backtrajectory analysis to determine the origin of the observed air masses and improvement of the UV index forecast. She comments the status of work on these points. Veerle lists the (future) contributions of RMI to WP 5 (outreach). She then presents the first achievements of RMI in the project. RMI has installed a Lidar ceilometer in May 2011. Veerle presents a few technical specifications of the instrument. The first results are shown on a figure. The interpretation is in progress.

Martine asks if the AOD measurements of the Brewer are submitted to databanks. Veerle answers that they are not yet submitted to any databanks. They will look into the possibility to submit their data.

Pierre Coheur asks whether AGACC-II focuses on boundary layer aerosol and – if so – whether it is realistic to run the backtrajectories in the boundary layer. He has some doubts regarding the feasibility of determining source regions for boundary layer aerosol.

4.3. Partner presentation: ULB by J. Vander Auwera

See presentation: 3_AGACC-II_First_Meeting_ULB_JVDA

Jean Vander Auwera presents the contributions of ULB. He shows the status and first conclusions of the work that has been realised.

Martine wonders why there is a difference between region 1 and 2-3, in figure 'Mean H₂CO amount from IR'. Jean answers that this is because there are some discrepancies in relative line intensities.

Martine asks about what Corinne and her team should use for the C₂H₆ lines. Jean answers that the use of the new data set – with adapted line positions, ie observed rather than calculated – should do a better job than the pseudolines. Calculations will be improved later if the required resources are obtained.

4.4. Partner presentation: ULg by E. Mahieu

See presentation: 4_AGACC-II_First_Meeting_ULG_EM

Emmanuel Mahieu presents the contributions of ULg and their first results. ULg is involved in WP 1 (monitoring of direct GHGs), WP 2 (VOCs & CFC substitutes) and WP5 (outreach). Their contributions are essentially based on the exploitation of long-term (FT)IR measurements under clear-sky conditions at the Jungfraujoch station. Emmanuel comments the first results of the work that has been done so far. He ends his talk by listing the communications about the accomplished work (presentations, papers, theses, etc.).

Willy Maenhaut asks what is the lifetime of CF₄. Emmanuel answers that its lifetime goes up to thousands of years. Half from CF₄ is from natural origin and half from anthropogenic origin. The aluminium production industry is reducing its emissions.

Pierre-François Coheur asks if PAN is still in the list of targeted species.

4.5. Partner presentation: BIRA-IASB UVVIS team, by M. Van Roozendael

See presentation: 5_AGACC-II_First_Meeting_BIRA_UVVIS_MVR

Michel Van Roozendael presents the contributions of the UVVIS team of BIRA-IASB. He lists the different workpackages they are contributing to. They are on schedule on everything except aerosol algorithms improvement. He presents the status and first conclusions of the work that has been done so far. Michel then comments the plan for setting up a monitoring site in Burundi.

Jean-François Müller asks whether the O₃ trend in the stratosphere can explain the observed NO₂ trends. Michel answers that we are now in a period of O₃ recovery. This does not seem to provide a plausible explanation.

4.6. Partner presentation: BIRA-IASB IR team by C. Vigouroux & F. Desmet

See presentation: 6_AGACC-II_First_Meeting_BIRA_IR_FDS

Filip Desmet presents the contributions of the IR team of BIRA-IASB to WP 1. He briefly presents the TCCON network and our observatory at Ile de la Réunion. The site has been operational since 10th September, so the measurements started very recently. Due to technical issues, there are no data of Ile de la Réunion to show. He shows data of Uccle earlier this year instead.

See presentation: 7_AGACC-II_First_Meeting_BIRA_IR_CV

Corinne Vigouroux presents the contributions of the IR team of BIRA-IASB to WP 2.

Willy Maenhaut asks what the lifetime of the measured airmasses is. Corinne explains that we are measuring a mixture of airmasses of different origin, nl. From Madagascar (short-lived), Africa, S. America (long-lived), even SE Asia.

Michel Van Roozendael asks which microwindows are used for formaldehyde. The ones used at Reunion Island are not the same as the ones used at Jungfraujoch by the ULg team. Therefore the sensitivities as a function of altitude may be different.

Pierre Coheur wonders about the variability of emission factors of different eco-systems (savannah, forest...). Corinne answers that – as we measure a mixture of airmasses of different origin, we cannot really attribute the observed emission factors to a single type of eco-system.

4.7. Discussion with Follow-Up Committee

Willy Maenhaut thinks that derivation of aerosol properties with a MAXDOAS instrument is a quite indirect and complex method to measure aerosol properties. He asks if other groups have been using this method as well. Michel Van Roozendael admits that it hasn't been used often yet, and that is why they are very careful with the interpretation of the results. But he also reminds the advantages of using a MAXDOAS instrument.

Willy shares an anecdote about the safety of the instruments in Rwanda and fears for a lack of security in Burundi.

Martine Vanderstraeten thanks the speakers. She wonders if clear messages could be delivered to policy makers after the end of the program. She points out the great importance of the conclusions in the reports. Martine De Mazière says that lots of the work will be processed in international networks, she gives examples. Martine Vanderstraeten admits that it is difficult to have direct interaction with policy makers, but asks for clear messages in reports. Martine De Mazière asks Martine Vanderstraeten to give her feedback about her reports in order to improve them.

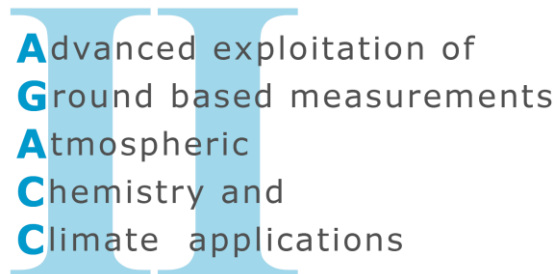
Martine Vanderstraeten says that GCOS draws the conclusions from the reports. There is a particular highlight on observations in developing countries. Focal Point for Belgium is Steven de Witte (KMI). Martine De Mazière suggests that Veerle De Bock and Hugo De Backer get in contact with Steven de Witte, for getting more visibility in the reports.

Martine thanks everybody for attending and closes the meeting.

End of meeting.

The BIOSOA team joins for lunch.

AGACC II



Minutes of Second Meeting with Follow-Up Committee

November 23rd, 2012

BIRA-IASB, Brussels

1. Location

The meeting took place in the meeting room of RMIB (Royal Meteorological Institute of Belgium), 3 avenue Circulaire, 1180 Uccle, Brussels, Belgium. This meeting room is situated in the main building of RMIB (KMI-IRM, see picture). RMIB is located at the Space Pole, as well as the BIRA-IASB building.

2. Participants

Participant name		Short name	Institute short name	Function(s) in project
Jean-Francois	Müller	JFM	BIRA-IASB	jfm@aeronomie.be
Pierre	Coheur	PC	ULB	pccoheur@ulb.ac.be
Willy	Maenhaut	WM	UGent	Willy.Maenhaut@UGent.be
Martine	De Maziere	MDM	BIRA-IASB	martine@oma.be
Nathalie	Kalb	NK	BIRA-IASB	nathalie.kalb@aeronomie.be
Elien	Raport	ER	BIRA-IASB	elien.raport@aeronomie.be
Michel	Van Roozendael	MVR	BIRA-IASB	michel.vanroozendael@aeronomie.be
Clio	Gielen	CG	BIRA-IASB	clio.gielen@aeronomie.be
Frederik	Tack	FT	BIRA-IASB	frederik.tack@aeronomie.be
Jean	Vander Auwera	JVA	ULB	jauwera@ulb.ac.be
Emmanuel	Mahieu	EM	ULg	Emmanuel.Mahieu@ulg.ac.be
Gaia	Pinardi	GP	BIRA-IASB	gaia.pinardi@aeronomie.be
Filip	Desmet	FD	BIRA-IASB	filip.desmet@aeronomie.be
Francois	Hendrick	FH	BIRA-IASB	Francois.Hendrick@aeronomie.be
Svelana	Kochenova	SK	BIRA-IASB	svetlana.kochenova@aeronomie.be
Corinne	Vigouroux	CV	BIRA-IASB	corinne.vigouroux@aeronomie.be
Veerle	De Bock	VDB	KMI-IRM	Veerle.DeBock@kmi-irm.be
Andy	Delcloo	AD	KMI-IRM	Andy.Delcloo@meteo.be
Marcela	Tudorie	MT	ULB	mtudorie@ulb.ac.be
Tomas	Foldes	TF	ULB	tfoldes@ulb.ac.be
Martine	Vanderstraeten	MV	Belspo	vdst@belspo.be
Roeland	Van Malderen	RVM	KMI-IRM	Roeland.VanMalderen@meteo.be
Hugo	De Backer	HDB	KMI-IRM	hugo.debacker@kmi-irm.be
Jan	Voet	JV		voet@irceline.be

3. Agenda

9:00 **Welcome with coffee / tea**

9:30 **Introduction by M. De Mazière, Coordinator**

- Goal of the meeting
- Presentation of Follow-Up Committee and partners
- Reminder about the project

9:45 - **Progress per Workpackage (15' per speaker)**

9:45 **WP1: direct greenhouse gases**

F. Desmet (BIRA-IASB) and E. Mahieu (ULg)

10:15 **WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere**

E. Mahieu (ULg), J. Vander Auwera (ULB), and C. Vigouroux (BIRA-IASB)

11:00 – 11:15 Coffee / Tea

11:15 **WP 3: Aerosol properties and radiative forcing at Ukkel (15' per speaker)**

V. De Bock (KMI-IRM) and F. Hendrick (BIRA-IASB)

11:45 **WP 4: African emissions**

M. Van Roozendael (BIRA-IASB)

12:00 **WP 5: Outreach & Perspectives**

M. De Mazière

12:15 Discussion with Follow-Up Committee

13:00 End of meeting

Sandwich lunch together with BIOSOA team and Follow-Up Committee.

4. Minutes

4.1. Introduction by M. De Mazière, Coordinator

See presentation: 01_AGACC-II_Second_Meeting_Intro_MDM

Martine De Mazière (MDM) welcomes everyone to the second meeting of the Follow-Up Committee of the AGACCII project. MDM briefly explains the goal of this meeting and presents the members of the Follow-Up Committee. She shows the agenda for the rest of the morning and suggests a few ideas for discussion. She gives a brief introduction to remind everyone of the project, its structure and objectives.

MDM specifically welcomes Eugene Ndenzako, who will help to install and maintain a MAXDOAS instrument in Bujumbura, Burundi.

4.2. WP1: direct greenhouse gases

See presentation: 02_AGACC-II_Second_Meeting_WP1_FD

F. Desmet (BIRA-IASB)

FD starts to talk about the observatory at Reunion Island, where it is exactly located and what instruments are installed (namely a spectrometer and a PICARRO in-situ GHG analyser). The installed spectrometer is used in the framework of two global atmospheric observation networks: TCCON (strictly regulated network, operating in NIR, with very strict rules, has amongst its target gases: main greenhouse gases, methane,...) and NDACC (Network for Detection of Atmospheric Composition Change; has capability to detect the same and many more gases but is operating in MIR, and a bit more free than TCCON). FD explains that part of what we plan to do in AGACC is to compare these products/networks.

FD says there are currently some problems with the spectrometer electronics that will hopefully be repaired soon.

He is glad to announce that Réunion is one of the official TCCON-sites and that they were able to collaborate with the people who have done the NIR-MIR CH₄ consistency analysis for two TCCON sites (Garmisch and Wollongong). In the future they can be entirely part of that comparison.

FD is asked by JFM if he could remind the participants how he came to the X_{gas} values and what they represent. “They are the average concentration over the total column of that molecule in dry air. To calculate our XCO₂, we take observed totum column (TC) of oxygen, and TC of target gas, and correct by the use the ratio of oxygen in dry air.

MDM says you could also do it using the pressure measurements. But it is suggested by TCCON to work this way because you eliminate some measurement artefacts.

See presentation: 03_AGACC-II_Second_Meeting_WP1_EM

E. Mahieu (ULg) thanks his coworkers and team members. He explains that the University of Liège is involved in WP 1 and 2.

The results of WP1 with regard to CCl₄ show that the study is now finalised and appears in JQSRT of this year.

With regard to CF₄, two approaches are highlighted, and more are being tested.

EM also shows N₂O trends.

JVA asks whether on the N₂O, the change in slope in the trend just occurs when you change instruments or not. EM says that this is not the case. It looks like an effect of going from one instrument to the other, but it has been verified that this is not the case.

Another significant aspect in the N₂O variations is the effect of tropopause height changes – cf anti-correlation with HF.

4.3. WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere

See presentation: continuation of 03_AGACC-II_Second_Meeting_WP1_EM

EM says that with regard to CFC substitutes they went looking for HFC-134a

Questions/comments:

MDM asks if for the HFC134a, they looked at the window used by ACE-FTS and if they use cross sections. EM confirms that ACE-FTS uses Xsections but that SFIT2 cannot handle that.

J. Vander Auwera (ULB)

See presentation: 04_AGACC-II_Second_Meeting_WP2_JvdA

JvdA presents his contribution to WP2. CV asks whether he will include the hot band of ethane. JvdA answers that this will unfortunately not be the case.

C. Vigouroux (BIRA-IASB)

See presentation: 05_AGACC-II_Second_Meeting_WP2_CV

CV briefly presents the main results of a paper released last month.

JFM remarks that when CV compares what she measured at La Reunion and the model, she says it is not consistent, but can she actually compare them?

CV explains.

There is a discussion with JFM, PFC and CV about the missing source of formic acid.

4.4. WP 3: Aerosol properties and radiative forcing at Ukkel

See presentation: 06_AGACC-II_Second_Meeting_WP3_VDB

V. De Bock (KMI-IRM) presents the progress of work on WP3 “Aerosol properties and radiative forcing at Ukkel”.

The model performs very poorly with low AOD values. She suggests a SSA value of 0.5, which is more realistic.

(The nephelometer and aethalometer are available for collaboration with BIRA, for example in Africa.)

She gives an overview of the work still to be done.

Then, many questions are asked.

WM wants to know if there is any hope to improve the SSA with low AOD, since they look very unrealistic. The SSA should at least be 0.8. VDB has to look into the way the SSA is occurs in the model to get to the calculated irradiance.

MDM then asks how sensitive this parameter (irradiance) is to retrieve SSA for various AOD values. JFM suggests to test different values for other parameters in the model.

JFM asks what is the SSA for high AOD: it is around 0.85, which is still very low.

MVR says he finds it strange that the SSA is so nicely correlated with the AOD.

MDM asks if the different general trends she showed are compatible with each other. VDB explains they did a multiple regression analysis for several seasons and the influence of several parameters depends on the season. On a yearly basis it is a bit more difficult, but they will look at it in the regression analysis.

MDM asks if measurements from the ceilometer are used by the weather forecast or in another context. VDB says that people are interested and HDB replies that the data are now available for the forecasters.

Magda Claeys (MC) asks what will happen when the aerosol come from different sources. Can something be done with the trajectory modeling?"

F. Hendrick (BIRA-IASB)

See presentation: 07_AGACC-II_Second_Meeting_WP3_FH

FH presents the MAX-DOAS related activities in the frame of WP3 at BIRA.

JFM remarks that MAXDOAS and CIMEL are very much alike and asks how this is possible. FH replies that high AOD from MAXDOAS can be cloud contaminated. CIMEL data is only available for clear sky conditions, so a cloud filtering method must be applied on the measurements.

MDM says they have developed the cloud filtering method based on colour index so they could use it for the first graph. In principle FH thinks this is possible, but at present, the mini-MAXDOAS does not measure at the wavelength of 700 nm needed in the Cloud filtering method as designed at the moment.

Discussion (about color index scheme) is to be continued after the meeting.

4.5. WP 4: African emissions

See presentation: 08_AGACC-II_Second_Meeting_WP4_MVR

M. Van Roozendael (BIRA-IASB) presents the progress of work on WP4 "African emissions".

MDM is surprised about the maps of formaldehyde. MVR explains that the season with largest formaldehyde emissions is different on Reunion Island than over Central Africa (and Burundi). On the maps, the wet and dry seasons are in overlap.

4.6. WP 5: Outreach & Perspectives

See presentation: 09_AGACC-II_Second_Meeting_WP5_MDM

M. De Mazière (BIRA-IASB) briefly overviews the outreach activities of the project since most speakers have already presented their own outreach. She shows the presentations since last report and the participation to events and data dissemination. She resumes perspectives for the different work packages and the progress of the project (including small delays and advances).

4.7. Discussion with Follow-Up Committee

Discussion is started by MDM. She things the main challenge is the work on aerosol measurements (at Ukkel) to get good data and reach some comprehensive results.

JV will forward the info to relevant people in Belgium. He asks if there is a need for additional infrastructure (because they are building new infrastructure in the frame of GMES). They want to know what users really need.

MDM answers that this kind of data (ground based) can be used to do validation of data products from GMES and satellite data used in GMES. There are connections, but our main problem is being able to sustainably support the observations and observation infrastructure. It is hard to maintain long term data sets and maintain the quality.

MDM adds that also in other meetings (like for example the NORIS project) the same question about continuity has come up. It is time to start lobbying.

MDM asks JFM about difficult molecules. Is there a priority in these molecules? PAN is difficult and of large interest to JFM.

JFM asks about the schedule for the future?

MDM says they are installing a second instrument at Maido, i.e, at a higher altitude: if we can get above the main water column, it will ease some retrievals.

MDM asks MVS about her opinion. She reminds everyone about the evaluation in February. The report now covers two years. There will be a confrontation with the evaluators around February, which will allow to confronting views. They have launched this week a call for proposal with room for projects on atmospheric research. MDM suggests to have the mid term evaluation after the closing of the call. MVS says the evaluation should be considered as added value and an opportunity to get external advice and make the work known.

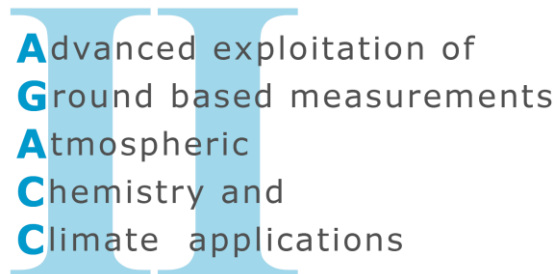
MDM says the report length is very short. She asks how strict this is. MVS assures there is some flexibility but asks us to think about the evaluators and try to make it short. The deadline is January 15th of 2013.

Martine thanks everybody for attending and closes the meeting,

End of meeting.

The BIOSOA team joins for lunch.

AGACC II



Minutes of Third Meeting with Follow-Up Committee

December 18th, 2013

BIRA-IASB, Brussels

1. Location

The meeting took place in the meeting room “Salle verte / Groene zaal” of BIRA-IASB, 3 avenue Circulaire, 1180 Uccle, Brussels, Belgium.

2. Participants

Participant name		Short name	Institute short name	Email address
Martine	De Maziere	MDM	BIRA-IASB	martine@oma.be
Nathalie	Kalb	NK	BIRA-IASB	nathalie.kalb@aeronomie.be
Michel	Van Roozendael	MVR	BIRA-IASB	michel.vanroozendael@aeronomie.be
Francois	Hendrick	FH	BIRA-IASB	Francois.Hendrick@aeronomie.be
Caroline	Fayt	CF	BIRA-IASB	caroline.fayt@aeronomie.be
Corinne	Vigouroux	CV	BIRA-IASB	corinne.vigouroux@aeronomie.be
Gaia	Pinardi	GP	BIRA-IASB	gaia.pinardi@aeronomie.be
Jean-Francois	Müller	JFM	BIRA-IASB	jfm@aeronomie.be
Filip	Desmet	FD	BIRA-IASB	Filip.desmet@aeronomie.be
Pierre	Coheur	PC	ULB	pfcoheur@ulb.ac.be
Jean	van der Auwera	JvdA	ULB	jauwera@ulb.ac.be
Emmanuel	Mahieu	EM	ULg	Emmanuel.Mahieu@ulg.ac.be
Veerle	De Bock	VDB	KMI-IRM	Veerle.DeBock@meteo.be
Roeland	Van Malderen	RVM	KMI-IRM	Roeland.VanMalderen@meteo.be
Hugo	De Backer	HDB	KMI-IRM	Hugo.DeBaker@meteo.be
Joris	Van Bever	JVB	KMI-IRM	joris.vanbever@meteo.be
Willy	Maenhaut	WM	UGent	Willy.Maenhaut@UGent.be
Martine	Vanderstraeten	MV	Belspo	vdst@belspo.be

3. Agenda

10:00 **Welcome with coffee / tea**

10:15 **Introduction by M. De Mazière, Coordinator**

- 'Tour de Table'
- Reminder about the project
- Goal of the meeting

Progress per Workpackage (20' per speaker, including 5 min discussion)

10:40 ***WP1: direct greenhouse gases***

F. Desmet (BIRA-IASB) and E. Mahieu (ULg)

11:25 ***WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere***

C. Vigouroux (BIRA-IASB) and E. Mahieu (ULg)

12:10 – 13:00 Lunch

13:00 ***WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere (cont'd)***

J. van der Auwera (ULB)

13:20 ***WP 3: Aerosol properties and radiative forcing at Ukkel***

V. De Bock (KMI-IRM) and F. Hendrick on behalf of C. Gielen (BIRA-IASB)

14:05 ***WP 4: African emissions***

M. Van Roozendael (BIRA-IASB)

14:25 ***Coffee & Tea***

14:40 ***WP 5: Outreach & Perspectives***

M. De Mazière

15:00 **Discussion with Follow-Up Committee;**

Discussion of flyer and Science Connection article drafts;

Discussion of future outreach activities

AOB

(all)

16:00 **End of meeting**

4. Minutes

4.1. Introduction by M. De Mazière, Coordinator

See presentation: 1_AGACC-II_Third_Meeting_Intro_MDM

MDM welcomes the participants. HDB introduces JVB who will work on AGACC-II from January 2014 onwards.

MDM presents the outline and goal of the meeting. She thanks the members of the Follow-Up Committee who attend the meeting. She presents a short summary of the project.

4.2. WP1: direct greenhouse gases

See presentation: 2_AGACC-II_Third_Meeting_WP1-2_EM

EM presents the status of work of ULg in the frame of WP1.

Concerning the work on CF₄: EM explains that part of the data has been re-analysed with a different a priori profile (different from the constant VMR vertical profile) in the fit procedure – which is a column retrieval (scaling of a priori profile). MDM asks if he has refitted the whole time series with this alternative a priori profile on. EM says this is not possible with the same one for the whole year because there are two regimes. They looked at a certain time period with a given profile and they applied the same method for another period but with a different profile. Probably the gap between the EMPA data and the FTIR data at Jungfraujoch could thus be closed.

WM asks what the main source of CF₄ is. EM answers that it is mainly aluminium production (mainly in China) and manufacturing of semi-conductors. The third source is natural (gassing from the terrestrial crust). Since the late '90 there is more anthropogenic CF₄ production, than from natural sources.

JFM asks what the significance of CF₄ is. EM answers that it is a strong and very long lived greenhouse gas (over 10.000 years).

See presentation: 3_AGACC-II_Third_Meeting_WP1_FD

FD presents the status of work of BIRA-IASB in collaboration with the University of Reunion in the frame of WP1.

MVR asks why FD sees a seasonal variation for N₂O and not for CO₂. FD says that the variation in N₂O is not a real variation, but it is due to tropopause altitude variations and the fact that we report column-averaged VMR (XNO₂). MDM adds that the different behaviour between CO₂ and N₂O is due to their different vertical profile shapes: the profile of N₂O drops off at the tropopause, which is not the case for CO₂ which has an almost constant VMR profile throughout the whole atmosphere. MDM recommends retrieving only the tropospheric column averaged VMR of N₂O, to get rid of this effect (cf. InGOS project)

PC asks if the short term variability (gaps and spikes during several days) of N₂O is real. FD says that he has not yet investigated N₂O. MDM comments that the precision is high enough to look at daily data. Short term tropopause height variation is a possible cause. MDM adds that the plan for next year is to look closer at the geophysical interpretations of the data.

MVR asks more details about the precision of NDACC versus TCCON data. MDM says that originally TCCON focuses on total column measurements with very high precision. In the future, TCCON will also focus on profile retrievals. It is also mentioned that the CH₄ retrievals still suffer from spectroscopic uncertainties and interferences with H₂O and HDO, at least in the NDACC windows.

WM asks how a vertical profile of HF looks like. FD answers that there is nothing in the troposphere and then it starts increasing very sharply. It's the opposite of N₂O.

MVR asks what the plans are to use the old Bruker 120. FD answers that it will fill a gap in the measurements in Brazil. MDM comments that it has been upgraded to reach a higher quality of the data (higher S/N).

4.3. WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere

See presentation: 4_AGACC-II_Third_Meeting_WP2_CV

CV presents the status of work of BIRA-IASB in the frame of WP2.

WM asks what the lifetime of methyl chloride is. CV says that it's only one year in the troposphere. That's why she doesn't believe in the large scatter at St-Denis.

MVR finds surprising that the standard deviations of the mean of the bins of CH₃OH are very small in comparison to the variability in between the different months. He would expect much larger error bars. CV says that we cannot compare because of the different amounts of data (not the same number of points in each bin). CV acknowledges that this needs further investigation and will work on the error bars with Sfit 4.

MVR remarks that the variability of C₂H₄ in the Jungfraujoch retrievals is higher in the model than in the observations. Usually it's the other way around: more variability in observations than in the model. CV says that this is another issue they will work on. EM says that he has applied a scaling method on the profiles, which looks promising. CV comments that we are working now on absorption signatures that are too small to be seen by eye; maybe a good retrieval is only feasible during biomass burning events. EM says it would be interesting at Jungfraujoch to go back to 1998, since there were a lot of biomass burning events in that year to see if there is more scatter in that particular year.

CV concludes her talk by saying that the easiest species have been done in the first two years of AGACC-II. The difficult species are yet to come.

See presentation: 2_AGACC-II_Third_Meeting_WP1-2_EM

EM presents the status of work of ULg in the frame of WP2.

JvdA comments that for H₂CO, the differences in HITRAN08 versus HITRAN12 are in the broadening coefficients, not in the intensities, but the broadening coeffs are important for tropospheric species.

See presentation: 5_AGACC-II_Third_Meeting_WP2_JvdA

JvdA presents the status of work of ULB in the frame of WP2.

The new spectroscopic data will be provided to ULG and BIRA for tests on atmospheric spectra.

4.4. WP 3: Aerosol properties and radiative forcing at Ukkel

See presentation: 6_AGACC-II_Third_Meeting_WP3_VDB

VDB presents the status of work of KMI-IRM in the frame of WP3.

MDM asks why the breakpoint of 1998 in the ozone recovery plot is such a big jump. VDB says she found several references in literature attributing this change point to the Montreal protocol. VDB says that she can't explain why it is such a sudden jump. JFM comments that 1998 was an El Nino year and wonders if this could have anything to do with that. VDB comments that they found a change point, much less sudden though, around the same period in the UV time series. MDM asks which trend analysis method she used. RVM says that they looked for the change in the mean, so it doesn't take into account the change in the slope.

WM asks which aerosol components are included in the Primary Particulate Matter (PPM) group. VDB doesn't know exactly, it's a class in the CHIMERE model. WM questions the classification of particles in the OPAC categories. VDB says that it's not easy to redefine aerosol classes from one model to another, but is open to discuss a different categorization to improve the model.

JFM asks if CHIMERE has been validated against AERONET observations. VDB and RVM are not sure.

JFM suggests using the AERONET measurements, but MDM says that they don't tell anything about composition. WM comments that they could be useful for the OPAC information.

MDM asks what the plans are about the high sensitivity to the different input parameters of the SSA algorithm for the Brewer. VDB thinks it has no use to continue using such sensitive algorithm. If there is time left, they will try to figure out what went wrong and if there have been errors in the implementation.

See presentation: 7_AGACC-II_Third_Meeting_WP3_FH

FH presents the status of work of BIRA-IASB in the frame of WP3 on behalf of C. Gielen.

JFM asks if this method is or will be implemented at other sites. FH answers that this is already the case at Xianghe and Jungfrauoch.

MDM asks if the cloud screening method can be applied to historical data, for example at Xianghe, since all the needed information is available. FH answers positively. MVR comments that the method is generally applicable, but has to be calibrated for each instrument. The instruments are not radiometrically calibrated; even the ratio can be different. Only the relative variations of these ratios are meaningful. MDM asks how to perform such calibration. MVR says it's based on statistics. This implies that we need enough measurements and variability.

4.5. WP 4: African emissions

See presentation: 8_AGACC-II_Third_Meeting_WP4_MVR

MVR presents the status of work of BIRA-IASB in the frame of WP4.

JFM asks how large the city of Bujumbura is. MVR answers that it has 500.000 inhabitants. The site is situated to the north of the city, close to Lake Tanganyika. The typical horizontal scale of the tropospheric observations using MAXDOAS is 40km, in this case over Lake Tanganyika. We try not to look directly in the direction of the city. JFM says that there seems to be some correlation between the NO₂ and HCHO measurements in the time series which would indicate local sources.

4.6. WP 5: Outreach & Perspectives

See presentation: 9_AGACC-II_Third_Meeting_WP5_MDM

MDM summarizes the status of the outreach activities and future perspectives of the entire consortium.

We have been asked to produce a policy-makers oriented flyer about the project. A draft has been prepared and circulated. A draft layout has been prepared as well.

MDM mentions that she has been interviewed by phone for an article in the SSD brochure (an initiative from Belspo) by Johan Lambrechts (a journalist hired by Belspo). His job is to select the most attractive points from the different inputs received, especially about science policy, and to translate our messages to a broad public. MDM says that she has not heard any news about the article since then. MV says that the deadline for the draft SSD brochure was 15 December. But there is some delay because of illness. Mid-January the overall brochure will be discussed. As soon as MDM receives a draft, she will circulate it for comments.

4.7. Discussion with Follow-Up Committee, Discussion of flyer and Science Connection article drafts, AOB

See presentation: 1_AGACC-II_Third_Meeting_Intro_MDM

MV comments that only the scientific members of the FUC attend the meeting. MDM says that we could organise a session on more strategical/political points instead of a long serie of

technical presentations for the non-scientific members of the FUC or stakeholders during the final meeting.

MV says that Belspo is thinking to plan a common final presentation at Belspo for all the projects and is open to suggestions. This should be decided by the summer.

MDM shows the draft flyer. MDM asks MV to read it as a representative of the “broad public”. MV asks how we plan to distribute the AGACC flyer. MDM answers that we will send some to Belspo and that we can distribute them at the Open doors of BIRA-IASB in 2014. MV suggests distributing it to the H2020 programme committee.

MDM asks how we could interact better with IPCC and suggests inviting Jean-Pascal Van Ypersele to the final meeting. MV answers that for the time being the options for interaction with IPCC are quite limited, with the 5th assessment cycle ending. The next (6th) assessment cycle starts in 2016.

We should look at what IPCC identified as gaps in the bigger report and take them on board when we prepare BRAIN.

MV says that we should try to translate the main conclusions from the IPCC reports for Belgium with our expertise and try to make it readable to the broad public. We could do the same for everything related to atmosphere, greenhouse gases, Montreal, etc. Why is our research important? What are the gaps? What are the short and long term efforts required? Etc.

MDM says that we will also prepare an article for Science Connection, in an edition that will presumably be distributed in electronic format. At the moment there are some doubts about the continuation of Science Connection because of reduction of funding.

MV suggests reaching out to students. She thinks there is a big audience for this kind of subject.

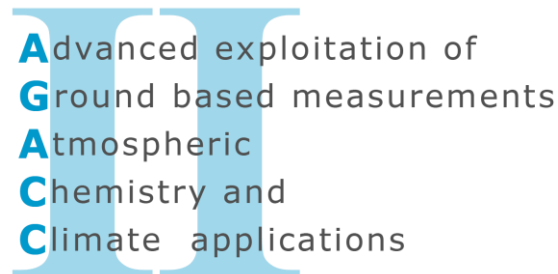
MDM says we could organise something specific on AGACC during the open days of BIRA-IASB 2014.

MDM says that the annual AGACC-II report will not be ready by the end of the year, since the annual meeting took place quite late this year. MV says that it is not a problem to deliver the report by end of January 2014.

MV says that at the end of the project will have to write a final report, but there will be no evaluation, since there was already one at the mid of the project.

16:00 End of meeting.

AGACC II



Minutes of Final Meeting with Follow-Up Committee

December 7th, 2015

Belspo, Brussels

1. Location

The meeting took place on Monday 7 December 2015 from 10h00 to 15h45 at Belspo, the Belgian Science Policy Office, in room B, Avenue Louise 231, 1050 Brussels, Belgium

2. Participants

Participant name		Short name	Institute short name	Email address
Martine	De Maziere	MDM	BIRA-IASB	martine@oma.be
Nathalie	Kalb	NK	BIRA-IASB	nathalie.kalb@aeronomie.be
Michel	Van Roozendael	MVR	BIRA-IASB	michel.vanroozendael@aeronomie.be
Francois	Hendrick	FH	BIRA-IASB	Francois.Hendrick@aeronomie.be
Caroline	Fayt	CF	BIRA-IASB	caroline.fayt@aeronomie.be
Corinne	Vigouroux	CV	BIRA-IASB	corinne.vigouroux@aeronomie.be
Gaia	Pinardi	GP	BIRA-IASB	gaia.pinardi@aeronomie.be
Clio	Gielen	CG	BIRA-IASB	clio.gielen@aeronomie.be
Jean-Francois	Müller	JFM	BIRA-IASB	jfm@aeronomie.be
Mahesh Kumar	Sha	MKS	BIRA-IASB	mahesh.sha@aeronomie.be
Pierre	Coheur	PC	ULB	pfcoheur@ulb.ac.be
Jean	Vander Auwera	JVA	ULB	jauwera@ulb.ac.be
Emmanuel	Mahieu	EM	ULg	Emmanuel.Mahieu@ulg.ac.be
Bruno	Franco	BF	ULg	bruno.franco@ulg.ac.be
Veerle	De Bock	VDB	KMI-IRM	Veerle.DeBock@meteo.be
Roeland	Van Malderen	RVM	KMI-IRM	Roeland.VanMalderen@meteo.be
Hugo	De Backer	HDB	KMI-IRM	Hugo.DeBACker@meteo.be
Andy	Delcloo	AD	KMI-IRM	Andy.Delcloo@meteo.be
Willy	Maenhaut	WM	UGent	Willy.Maenhaut@UGent.be
David	Cox	DC	Belspo	David.COX@belspo.be

3. Agenda

10:00 **Welcome with coffee / tea**

10:15 **Introduction by M. De Mazière, Coordinator**

- 'Tour de Table'
- Reminder about the project
- Goal of the meeting

Progress per Workpackage (25' per speaker, including 5 min discussion)

10:35 ***WP1: direct greenhouse gases***

M. K. Sha (BIRA-IASB) and E. Mahieu (ULg)

11:25 ***WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere***

C. Vigouroux (BIRA-IASB) and E. Mahieu (ULg)

12:15 – 13:00 Lunch

13:00 ***WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere (cont'd)***

J. van der Auwera (ULB)

13:25 ***WP 3: Aerosol properties and radiative forcing at Ukkel***

V. De Bock (KMI-IRM) and C. Gielen (BIRA-IASB)

14:15 ***WP 4: African emissions***

F. Hendrick (BIRA-IASB)

14:40 ***Coffee & Tea***

15:00 ***WP 5: Outreach & Perspectives***

M. De Mazière

15:15 **Discussion with Follow-Up Committee**

AOB

(all)

15:45 **End of meeting**

4. Minutes

4.1. Introduction by M. De Mazière, Coordinator

See presentation: 1_AGACC-II_Final_Meeting_MDM

MDM welcomes the participants. She presents David Cox, who replaces Martine Vanderstraeten as contract officer at Belspo. She presents and thanks the members of the Follow-Up Committee who attend the meeting.

She outlines the goal of the meeting.

She presents a short summary of the project.

4.2. WP1: direct greenhouse gases by M. K. Sha (BIRA-IASB) and E. Mahieu (ULg)

See presentation: 2_AGACC-II_Final_Meeting_MKS

MKS presents the work performed by BIRA-IASB in the frame of WP1. He mentions that he recently took over the work performed by Filip Desmet, who left BIRA-IASB during the project.

See presentation: 3_AGACC-II_Final_Meeting_EM

EM presents the work performed by ULg in the frame of WP1.

WM observes that the estimation of the lifetime of Cl_4 has changed since the beginning of the project. EM says that this is correct. It's still a lively question because we don't know exactly what's going on (rising emissions vs higher lifetime).

WP 2: Volatile Organic Compounds (VOC) and CFC-substitutes in the troposphere by C. Vigouroux (BIRA-IASB), E. Mahieu (ULg) and J. van der Auwera (ULB)

See presentation: 4_AGACC-II_Final_Meeting_CV

CV presents the work performed by BIRA-IASB in the frame of WP2.

See presentation: 5_AGACC-II_Final_Meeting_EM

EM presents the work performed by ULg in the frame of WP2.

See presentation: 6_AGACC-II_Final_Meeting_JvdA

JvdA presents the work performed by ULB in the frame of WP2.

MDM asks if the improved linelist is submitted to HITRAN or GEISA. JvdA answers that he waits for the article to be approved.

4.3. WP 3: Aerosol properties and radiative forcing at Ukkel by V. De Bock (KMI-IRM) and C. Gielen (BIRA-IASB)

See presentation: 7_AGACC-II_Final_Meeting_VDB

VDB presents the work performed by KMI-IRM in the frame of WP3.

WM asks if they can use the SSA from the CIMEL. VDB says that it has been envisaged, but it's an inversion measure hence not really trustable.

See presentation: 8_AGACC-II_Final_Meeting_CG

CG presents the work performed by BIRA-IASB in the frame of WP3.

JFM asks if CAMS assimilates NO₂ from the satellite. MVR says that there is a much better agreement with the regional model because it has a higher resolution. CG says she needs to make further comparisons and see if the station has a big impact (8 stations in Brussels).

4.4. WP 4: African emissions by F. Hendrick (BIRA-IASB)

See presentation: 9_AGACC-II_Final_Meeting_FH

FH presents the work performed in the frame of WP4.

MDM asks questions about the link between Bujumbura and La Réunion. MDM suggests FH and CV to look further into that.

4.5. WP 5: Outreach & Perspectives by M. De Mazière

See presentation: 10_AGACC-II_Final_Meeting_MDM

MDM presents the work performed in the frame of WP5.

She outlines the poor perspectives as to continuation of the work. There seems to be little long term support available for monitoring, despite many efforts to tender for support.

She concludes by acknowledging the excellent results and collaboration in the project. All objectives have been achieved and the aim of the team is to continue the monitoring at state-of-the-art level.

4.6. Discussion with Follow-Up Committee, AOB

PC confirms the positive results and regrets the lack of sufficient support to continue the excellent work.

WM agrees.

DC is also impressed by the project. He doesn't have an answer about the funding issue.

EM says it's very difficult to get funding for long term monitoring. He stresses that long term series like those of Jungfraujoch will lose their value if they are stopped.

MDM says that some work presented today is not included in the draft final report. She offers the possibility to include these new inputs in the report.

She thanks the audience for their attention and the consortium members for their fine work and closes the meeting.