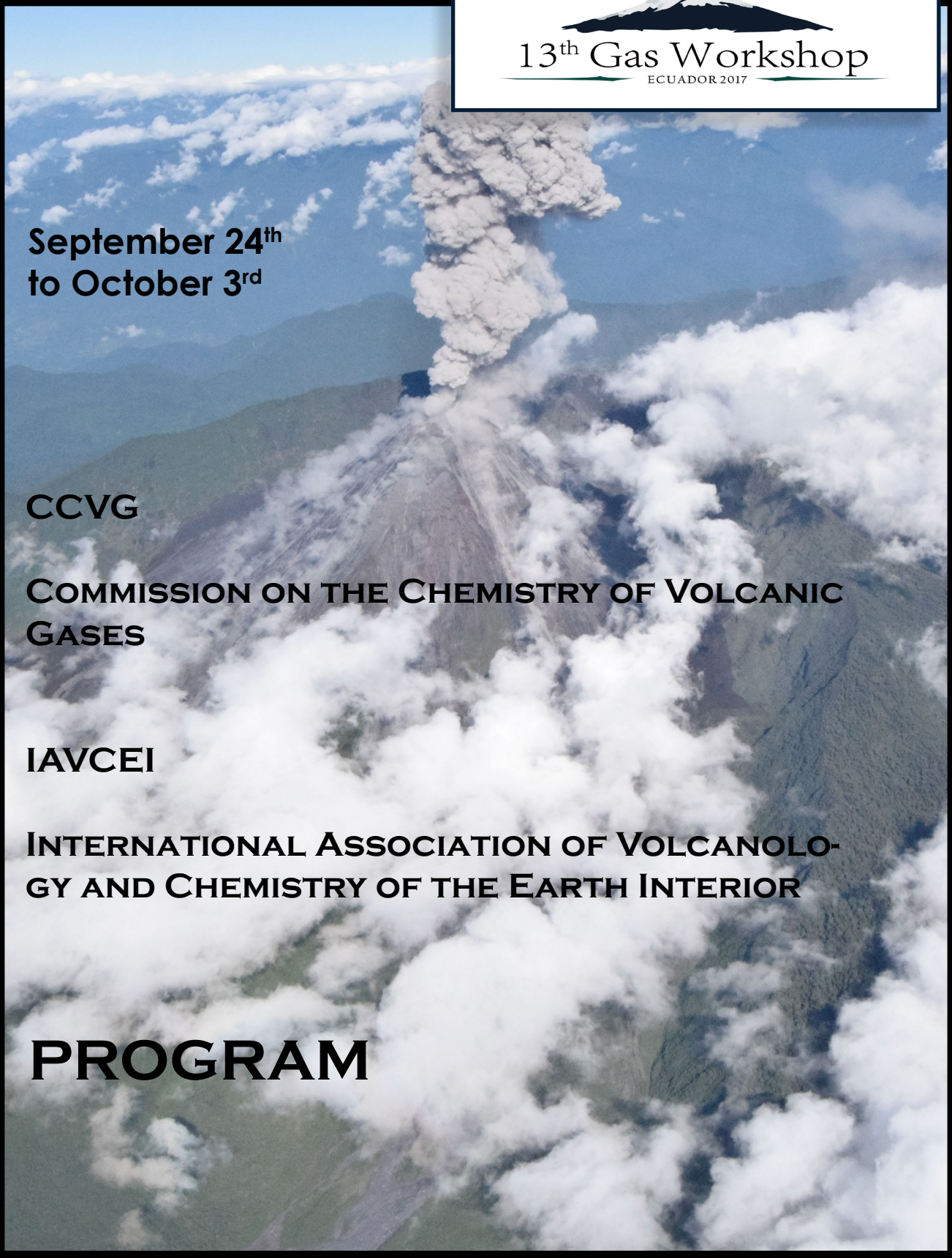
13th Gas Workshop

ECUADOR 2017



September 24th
to October 3rd

CCVG

Commission on the Chemistry of Volcanic Gases

IAVCEI

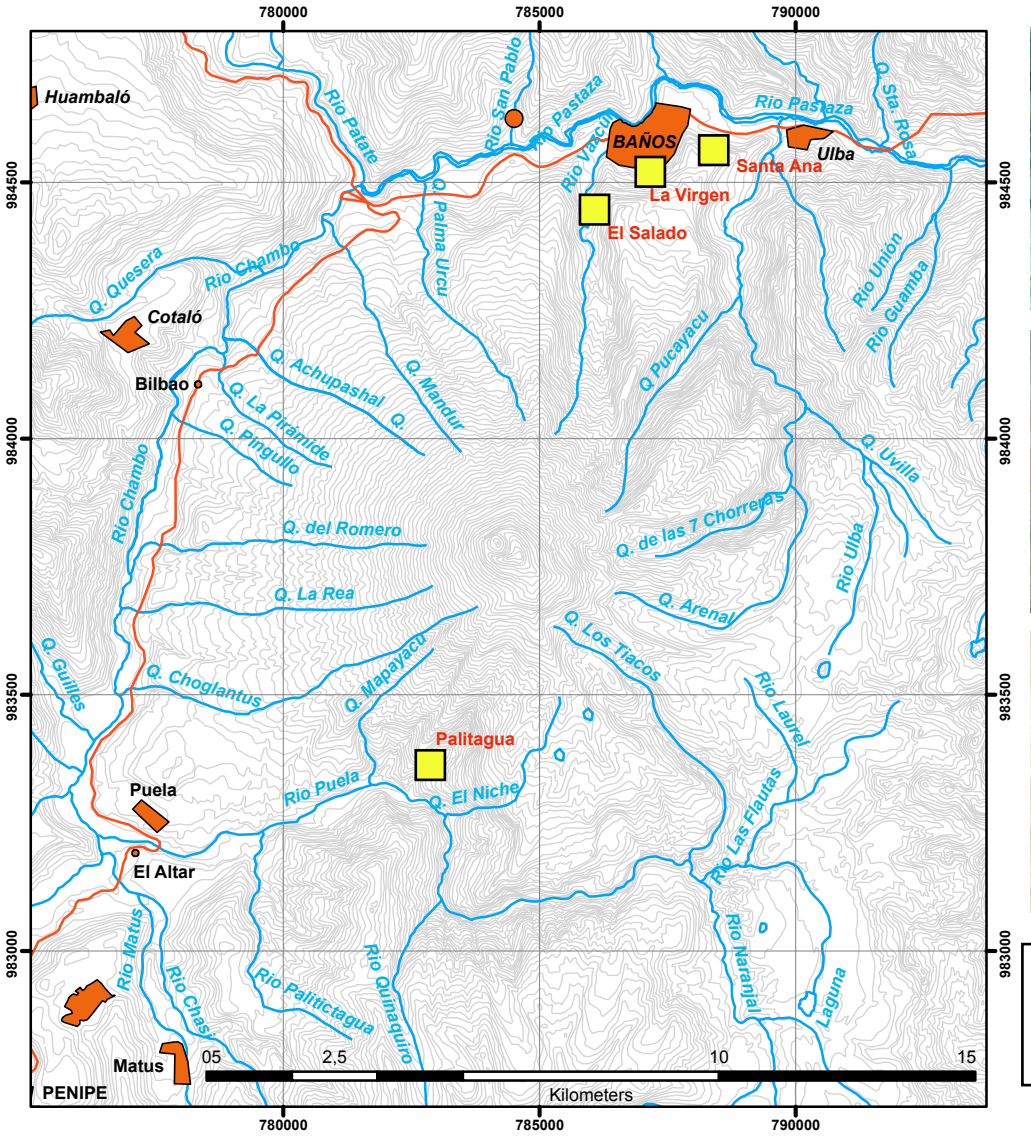
International Association of Volcanology and Chemistry of the Earth Interior

PROGRAM

CCVG IAVCEI IG Instituto Geofísico-EPN Parque Nacional GALÁPAGOS Ecuador Escuela Politécnica Nacional

Thermal Springs : Thursday 28 and Friday 29 September

At Tungurahua the continuous presence of high-flow rate thermal springs at the base of the volcanic edifice and active fumaroles in the crater rim and some 1000 m bellow it, indicate the presence of a well developed hydrothermal system. **Water and bubbling gases can be sampled at three sites: La Virgen, Santa Ana and El Salado. Palitagua is another thermal spring the site is remote.**



a. La Virgen
b. Santa Ana
c- El Salado

Location of the thermal springs around Tungurahua and the sources themselves.

Remote Sensing : Thursday 28 and Friday 29 September

Remote sensing, like COSPEC, MAX-DOAS, mobile-DOAS, Solar - FTIR, UV and IR cameras have been performed at Tungurahua since 1999, when it started an intense activity period. Since March 2016, gas emissions have not been detected at Tungurahua, hence this kind of measurements might not be possible during this workshop.

Tungurahua seen from the Tungurahua volcano observatory, located15 km to the NW of the volcano.

Tungurahua crater from the summit.

GUAGUA PICHINCHA VOLCANO

Cristal dome from the crater rim.
Fumaroles at the base of Cristal dome
Sunday 1st October

The currently active center of the volcanic complex, the Late Holocene Cristal dome, is nested inside the west-opening Toaza amphitheater. The last active period of Guagua Pichincha started in 1999 and finished in 2001. Activity started with phreatic explosions followed by vulcanian explosions. Afterwards, dome forming eruptions with consecutive collapses were the main observed phenomena.

Between May 2016 and June 2017 uplift was observed by INSAR. Seismic swarms occurred every one or two weeks until April 2016. Since then only few earthquakes were recorded.

There are few sampling fumaroles with temperatures around 80-90°C. Sampling here requires accessing to the active dome 700 m below the crater rim. This will be considered the days before depending on the seismic activity.
UV and IR cameras, as well as drones can be used from the crater rim without any danger.

PULULAHUA VOLCANO

A **campain to measure CO_2 degassed through soil** is planned at Pululahua (**Sunday 1st and Monday 2nd October**) We will spend two days in order to get enough data points to make a CO_2 degassing map to ideally compare the obtained results to those published by Padrón et al. (2008).

COTOPAXI VOLCANO

Remote sensing measurements will be possible at Cotopaxi. We'll spend one day (**Monday 2nd October**) trying to make distal measurements from the Refugio parking at 4600 m a.s.l. SO_2 measured by permanent DOAS stations is around 300 t/d, it is low compared to what was emitted during the activity in 2015. Nevertheless, SO_2 is present in the plume.

Volcanic plume at Cotopaxi crater.

Pre-Conference field trip : Wednesday 20 to Saturday 23 September

REVENTADOR VOLCANO

Reventador has been erupting since 2002. On June 24, a lava flow reaching 2.6 km from the crater was emitted. Discrete explosions, sometimes with small pyroclastic flows, occur every 1-2 hours. Last measurements of SO_2 by DOAS, performed on August 2017, yielded 800 t/d. **Remote sensing, with MAX-DOAS, mobile-DOAS, Solar - FTIR, UV and IR cameras is possible**. Diffuse CO_2 might be difficult as the relief is formed by a field of lava flows extruded since 2002. Due to the explosive activity, no in-situ measurements are currently possible.

Volcanic explosions seen from the air. Plume and lava flow seen from 4.6 km from the vent.

Fumarolic field at Sierra Negra

At Galápagos we will visit the Volcán de Azufre fumarolic field in Sierra Negra volcanoe. Several fumaroles are present. The maximum temperature measured on 2014 was of 280 ºC. SO_2 flux measured in 2014 by mobile-DOAS yield 10t/d.

Here in situ sampling is possible, also remote sensing methods could be performed. CO_2 difused through soil is possible too (Padrón et al. 2012).

What to wear?
Direct sampling
Customs
Invitation letters
Receipts...

On the next page!

Pictures by: Marco Almeida, Stefany Almeida and Francisco Vásconez.

What to wear?

Quito is at 2800 m.a.s.l. In september the weather is sunny but windy. Temperature is around 15-25 ºC. You should always bring warm clothes. In the afternoon we might have rain, a rain-coat might be useful.

Baños is at 1800 m.a.s.l. In september it's usually sunny. Temperature is around 15-25 ºC. It usually rains at night.

Volcanoes are above 4000 m.a.s.l. Warm and impermeable clothes are required. Remember that at the Equator the sun radiation is always strong, even if you have a cloudy sky. Sun protection is required.

At Reventador, you will need impermeable clothes and warm clothes for the night.

At Galapagos the temperature is usually warmer, it's common to be around 20 to 30 ºC. Sun protection is required. Fumaroles are very agressive so protection for your clothes is useful.

Appropriate gas sampling equipment (e.g. respirator, gloves, etc.) as well as helmets are strongly recommended specially at Reventador, Guagua Pichincha and Galápagos.

Direct sampling

We will provide milipore water but we do not have any chemicals, so please bring the chemicals that you will use.

A vaccum pump will be available.

Customs

We have prepared a formatted letter to fill. Please send back the filled letters to shidalgo@igepn.edu.ec. We will send a signed scan that you can show at customs if required. Try not to bring extra luggage in order to avoid extra controls at arrival. You can download the letter at the CCVG webpage.

Invitation letters

If you requiere an invitation letter please send a request to: Nicole Bobrowski or Franco Tassi to: Nicole.Bobrowski@iup.uni-heidelberg.de and franco.tassi@unifi.it

Receipts

Digital bill will be send by e-mail under request. Please send your request to juanzec@yahoo.com. including proper billing information. Paper receipts will be given personally during the workshop.

CONGRESS CCVG-IAVCEI
September 24- October 04, 2017

September 24 Sunday

13:00- 17:00 Registration of participants and distribution of congress material
*Hotel Check In starts at 13:00
16:30-18:00 Ice Breaker- Welcome cocktail and invitation by Congress hosts
18:00-20:00 Ecuadorian Party bus "Chiva" with music and drinks
Free for dinner
Lodging Hotel Reina Isabel

September 25 Monday

07:00- 09:00 Breakfast
09:00- 12:00 Travel to Baños
12:00-13:00 Check in to Hotel Sangay
13:00-14:30 Lunch at Hotel Sangay

SCIENTIFIC PROGRAM (Hotel Sangay Conference room)

14:30-14:45 Welcome by CCVG Leadership – Franco Tassi and Nicole Bobrowski
14:45-15:30 Volcanoes and Gas Monitoring in Ecuador – Silvana Hidalgo and Santiago Arellano

OBSERVATIONS AND INTERPRETATIONS I, Conveners: Nicole Bobrowski and Franco Tassi

15:30-16:00 BrO/SO2 variations in the volcanic gas plumes of Cotopaxi and Tungurahua - Florian Dinger
16:00-16:30 Sulfur dioxide degassing in Copahue Volcano between 2014 and 2016 and its relationship with surface activity – Gabriela Velasquez

16:30-17:00 Coffee Break

17:00-18:30 POSTER SESSION 1: Volcanic Gas Impacts & Observations and Interpretation (See details on Pages 5-7) Lobby and La Cascada Salon

19:00-20:00 Dinner at Hotel Sangay
Evening Free & Lodging at Hotel Sangay

September 26 Tuesday

07:30- 09:00 Breakfast

SCIENTIFIC PROGRAM (Hotel Sangay – Conference room)
TECHNICAL DEVELOPMENT, Conveners: Franco Tassi and Nicole Bobrowski

09:00-9:30 Volcanic gas studies in high altitude volcanic plumes with a compact drone – Santiago Arellano
9:30-10:00 Remote measurement of high pre-eruptive water vapor emissions at Sabancaya Volcano by passive differential optical absorption spectroscopy – Christoph Kern
10:00-10:30 Quantitative imaging of volcanic plumes – Recent advances – Ulrich Platt

10:30-11:00 Coffee Break

September 26 continued.

TECHNICAL DEVELOPMENT, Conveners: Patrick Allard and Ryunosuke Kazahaya

11:00-11:30 UV remote sensing of volcanic gases with smartphone sensor based imaging and spectroscopic devices – Thomas Wilkes
11:30-12:00 Investigation of BrO in volcanic plumes: Comparing satellite data from OMI and GOME-2 - Simon Warnach
12:00-12:30 Halogen speciation in the as and particle phase: Analytical methods and applications – Thorsten Hoffmann

12:30-14:00 Lunch at Hotel Sangay

VOLCANIC GAS IMPACTS, Conveners: Patrick Allard and Ryunosuke Kazahaya

14:00-14:30 On the CO2/St gas ratio vs. trace element association in arc magmas, and its implication for the global volcanic CO2 output – Alessandro Aiuppa
14:30-15:00 Global distribution of carbon isotopes in volcanic gases – Tobias Fischer
15:00-15:30 Updated constraints on Aleutian Arc volatile cycling through volcanic gas geochemistry – Taryn Lopez

15:30-16:00 Coffee Break

VOLCANIC GAS IMPACTS, Conveners: Santiago Arellano and Taryn Lopez

16:00-16:30 Transport of metals in the volcanic plumes of White Island, Yasur and Etna – Celine Mandon
16:30-17:00 Unseen but not unfelt: Building resilience to persistent volcanic emissions (UNRESP): A case study from Masaya Volcano, Nicaragua – Evgenia Ilynskaya

17:00-18:30 POSTER SESSION II: Technical Development & Multidisciplinary
(See details on Pages 5-7; Lobby and Salon La Cascada)

19:00-20:00 Dinner at Hotel Sangay

Evening Free & Lodging at Hotel Sangay

September 27 Wednesday

07:30- 09:00 Breakfast

SCIENTIFIC PROGRAM (Hotel Sangay – Conference room)
OBSERVATIONS & INTERPRETATIONS II: Conveners: Taryn Lopez and Santiago Arellano

09:00-09:30 Variation of volcanic gas composition and magma-hydrothermal interaction at Nakadake Crater, Aso Volcano, Japan – Hiroshi Shinohara
09:30-10:00 Temperature and gas composition of the Avachinsky volcano fumaroles (Kamchatka) in 2013-2017) – Nataliya Mailik
10:00-10:30 13C/12C of CO2-rich inclusions in mantle cumulates from Stromboli Arc Voclano (Italy) reveals the influx into the wedge of CO2 from slab sediments – Andrea Rizzo

10:30-11:00 Coffee Break

September 27 continued.

OBSERVATIONS & INTERPRETATIONS II: Conveners: Tobias Fischer and Fatima Vivieros

11:00-11:30 The curious case of fumarole "F0", White Islands: Complex interaction between magmatic, hydrothermal and meteoric components along a volcanic fumarolic conduit, and current strategies for its autonomous real-time monitoring – Bruce Christenson
11:30-12:00 Investigating the connection between sulfur degassing and the oxidation state of melt at Mount St. Helens and Augustine Volcanoes (USA) via Xanes – Allan Lerner
12:00-12:30 Recent improvements in MAGA database and DECADE web portal – Carlo Cardellini

12:30-14:00 Lunch at Hotel Sangay

MULTIDISCINPLINARY: Conveners: Fatima Vivieros and Tobias Fischer

14:00-14:30 Post-paroxysmal magma degassing at Merapi Volcano, Java (Indonesia): Continuous survey and implications – Patrick Allard
14:30-15:00 Seismo-acoustic and SO2 recordings and nature of the emitted ash during the January 2010 eruptive phase of Tungurahua Volcano (Ecuador) – Jean Battaglia
15:00-15:30 Gas emissions from Cotopaxi Volcano, Ecuador, in 2015 – Silvana Hidalgo
15:30-16:00 Pre-eruptive inflation caused by gas accumulation: Insight from detailed gas flux variation at Sakurajima Volcano, Japan – Ryunosuke Kazahaya

16:00-16:30 Coffee Break

16:30-17:30 Field trip presentation – Silvana Hidalgo and Jonathan Hall
17:30-18:30 Discussion

19:00-20:00 Dinner at Hotel Sangay
Evening Free & Lodging at Hotel Sangay

September 28 Thursday

07:30- 09:00 Breakfast
09:00-16:00 Group 1: Tungurahua: Full Day DOAS with Box Lunch
09:00-16:00 Group 2: Full Day Sampling Thermal Springs & Casa de Arbol w/ Box Lunch
Free for Dinner (on your own)

September 29 Friday

07:30- 09:00 Breakfast
09:00-16:00 Group 1: Tungurahua: Full Day DOAS with Box Lunch
09:00-16:00 Group 2: Full Day Sampling Thermal Springs & Casa de Arbol w/ Box Lunch
19:00-20:00 Dinner at Hotel Sangay

September 30 Saturday

07:30- 10:00 Breakfast
10:00-14:00 Check Out and return to Quito
Remainder of the day free
Dinner on your own
Lodging Hotel Reina Isabel

October 01 Sunday

TBD Breakfast
05:00 – 16:40 Group 1- Guagua Pichincha: Full Day Guagua Pichincha with snacks & Lunch at La Antigua (2pm)
07:30-16:30 Group 2- Pululahua: Full Day Pululahua with Box Lunch

Remainder of the day free
Dinner on your own
Lodging Hotel Reina Isabel

October 02 Monday

07:30-16:30 Group 1- Pululahua: Full Day Pululahua with Box Lunch
07:00-16:30 Group 2- Cotopaxi: Full Day Cotopaxi with Box Lunch

Remainder of the day free
Dinner on your own
Lodging Hotel Reina Isabel

October 03 Tuesday

09:00-13:00 Data analysis seminars
13:00-14:30 Free for lunch
15:30-16:30 Presentation of proposals for next workshop & discussion
16:30-17:00 Coffee Break
17:00-18:30 Final discussion time and closing remarks
20:00-21:00 Farewell Dinner at Hotel Reina Isabel
Lodging Hotel Reina Isabel

October 04 Wednesday

All Day Transfers Hotel to the Airport

POSTER SESSION I:

VOLCANIC GAS IMPACTS

1. FIRST DETERMINATION OF THE CHEMISTRY AND FLUXES OF MAGMA-DERIVED GAS EMISSIONS FROM MAYON VOLCANO, PHILLIPINES – Patrick Allard

2. HOW MUCH IODINE MONOXIDE CAN BE FOUND IN MT ETNA'S PLUME? – Nicole Bobrowski

3. DOAS-NOVAC NETWORK AT COLOMBIAN VOLCANOES (2006-2017) – Viviana Burbano

4. A DECADE OF GLOBAL VOLCANIC SO2 EMISSIONS MEASURED FROM SPACE – Simon Carn

5. PRELIMINARY ASSESSMENT OF VOLATILE CONTROL ON THE CENTRAL ANDEAN VOLCANIC ZONE, NORTHERN CHILE – Cristobal Gonzales

6. UNDERSTANDING THE ENVIRONMENTAL IMPACTS OF LARGE FISSURE ERUPTIONS: AEROSOL AND GAS EMISSIONS FROM THE 2014–2015 HOLUHRAUN ERUPTION (ICELAND) – Evgenia Ilyinskaya

OBSERVATIONS & INTERPRETATIONS

7. MONITORING DIFFUSE CO2 DEGASSING DURING THE VOLCANIC UNREST OF CAMPI FLEGREI (ITALY) – Carlo Cardellini

8. GAS EMISSIONS FROM VOLCANOES OF THE KURIL ISLAND ARC (NW PACIFIC): GEOCHEMISTRY AND FLUXES – Yuri Taran

9. DIFFUSE HELIUM EMISSION AND HEAT FLUX FROM CERRO NEGRO – Mar Alonso

10. MULTIGAS DEPLOYMENT FOR BASELINE CHARACTERIZATION OF GAS EMISSIONS ON THE SOLFATARA PLATEAU, YELLOWSTONE NATIONAL PARK, USA – Laura Clor

11. METHANE ORIGIN AT THE CIOMADUL VOLCANO: METHANE CONCENTRATION ABOVE 1% IN A VOLCANIC AREA – Artur Ionescu

12. CIOMADUL DORMANT VOLCANO (EASTERN CARPATHIANS, ROMANIA): GAS FLUX AND CONSTRAINTS ON THE ORIGIN OF GASES - Boglarka-Mercedesz Kis

13. CARBON DIOXIDE DIFFUSE EMISSIONS AT THE PLANCHÓN – PETEROA VOLCANIC COMPLEX, SOUTHERN ANDES, ARGENTINA – CHILE - Maria Clara Lamberti

14. CARBON DIOXIDE EMISSION FROM QUILOTOA VOLCANIC LAKE, ECUADOR - Gladys Melian

15. MONITORING DIFFUSE CO2 DEGASSING FOR THE VOLCANIC SURVEILLANCE OF TAAL VOLCANO, PHILIPPINES - Eleazar Padron

16. CONTINUOUS MONITORING OF SOIL DIFFUSE CO2 EFFLUX AT ASO VOLCANO, JAPAN – Masaaki Morita

17. MODELING OF CO2 DEGASSING DYNAMICS AT MAMMOTH MOUNTAIN, CALIFORNIA - Loic Peiffer

18. STABLE CARBON AND HYDROGEN ISOTOPES OF CH4 AND LIGHT HYDROCARBONS IN MAGMATIC AND HYDROTHERMAL EMISSIONS FROM VULCANO ISLAND (SOUTHERN ITALY) - Andrea Ricci

19. THE GEOTHERMAL RESOURCE IN THE GUANACASTE REGION (COSTA RICA): NEW HINTS FROM THE GEOCHEMISTRY OF NATURALLY DISCHARGING FLUIDS - Franco Tassi

20. EXPANSION OF A FUMAROLIC FIELD AT CALDEIRAS DA RIBEIRA GRANDE AREA (S. MIGUEL, AZORES) - Fatima Viveiros

21. INFLUENCE OF PRECIPITATION AND ATMOSPHERIC PRESSURE ON THE FUMAROLE TEMPERATURE AND THE GAS VELOCITY AT LASTARRIA VOLCANO, NORTHERN CHILE - Martin Zimmer

22. INDOOR RADON (222Rn) IN THE VOLCANIC ISLAND OF S. MIGUEL (AZORES) - Catarina Silva

23. SULFUR DIOXIDE EMISSIONS AND DIFFUSE CARBON DIOXIDE FLUX AT MASAYA VOLCANO FROM 2010 TO 2017 - Martha Ibarra

24. EVALUATION OF SULFUR DIOXIDE AT SABANCAYA VOLCANO BY DIFFERENTIAL OPTICAL ABSORPTION SPECTROSCOPY 2014-2017 - Fredy Apaza

POSTER SESSION II:

TECHNICAL DEVELOPMENT

25. IMPLEMENTATION OF AN AUTOMATIC DATA ACQUISITION SYSTEM TO MEASURE DISSOLVED CO2 CONCENTRATIONS IN NATURAL WATER SPRINGS - Jorge Cordova

26. CONTINUOUS FUMAROLIC GAS SAMPLING AND REAL-TIME ANALYSIS AT SOLFATARA CRATER (CAMPI FLEGREI, SOUTHERN ITALY) BY MEANS OF AN AUTOMATIC MONITORING SYSTEM - Alessandro Fedele

27. ON THE ACCURACY AND PRECISION OF MULTI-GAS MEASUREMENTS - Peter Kelly

28. INTRODUCING CCAV-GAS: THE CENTER FOR THE COMPLETE ANALYSIS OF VOLCANIC GASES - THE FIRST OF ITS KIND ON THE CENTRAL AMERICAN VOLCANIC ARC - Maarten de Moor

29. LED BASED QUARTZ ENHANCED PHOTOACOUSTIC SPECTROSCOPY: A COST EFFECTIVE SOLUTION FOR IN-SITU DETECTION OF VOLCANIC SULFUR DIOXIDE? - Alexander Engeln

30. UNDERSTANDING REACTIVE PLUME CHEMISTRY - DEVELOPMENT AND APPLICATION OF GAS DIFFUSION DENUDER SAMPLING TECHNQIUES WITH IN SITU DERIVATIZATION FOR THE DETERMINATION OF HYDROGEN HALIDES IN VOLCANIC PLUMES - Alexandra Gutmann

31. IMAGING TRACE GASES IN VOLCANIC PLUMES WITH FABRY PEROT INTERFEROMETERS - Jonas Kuhn

32. NON-DISPERSIVE UV ABSORPTION SPECTROSCOPY: A PROMISING APPROACH FOR CONTINUOUS IN-SITU DETECTION OF VOLCANIC SULFUR DIOXIDE - Jan-Lukas Tirpitz

33. IMAGING SO2 IN VOLCANIC PLUMES USING A SAGNAC INTERFEROMETER - Robert Wright

34. RETRIEVAL ADVANCES OF BrO/SO2 MOLAR RATIOS FROM NOVAC - Elsa Wilken

MULTIDISCIPLINARY

35. MINERALOGY AND GEOCHEMISTRY OF MINERAL SCALES FROM THE GEYSERS GEOTHERMAL FIELD, CALIFORNIA, USA - Mario Guzman

36. CHEMISTRY AND MINERALOGY OF FUMAROLIC DEPOSITS, CASE OF LASTARRIA AND GUALLATIRI VOLCANOES, NORTHERN CHILE - Manuel Inostroza

37. ABUNDANCES AND DISTRIBUTION OF FATTY ACIDS IN SINTERS FROM EL TATIO GEYSERS FIELD (CHILE) - Juan Sanchez

38. ANOMALOUS CHANGES OF DIFFUSE CO2 EMISSION AND SEISMIC ACTIVITY AT TEIDE VOLCANO, TENERIFE, CANARY ISLANDS - Gladys Melian

39. MULTIPARAMETERIC REMOTE SENSING INVESTIGATIONS INTO THE DEGASSING DYNAMICS OF MASAYA LAVA LAKE - Tom Pering

40. VOLCANIC ASH IRON CHEMISTRY MODIFIED BY IN-PLUME PROCESSING: INSIGHTS FROM HIGH TEMPERATURE GAS-ASH INTERACTION EXPERIMENTS - Elena Maters

41. HIGH TEMPERATURE GAS ADSORPTION AND SCAVENGING IN LARGE VOLCANIC ERUPTIONS: AN EXPERIMENTAL APPROACH - Ana Silvia Casas

42. EXPERIMENTAL INSIGHTS INTO DEGASSING OF OPEN-VENT BASALTIC VOLCANOES - Julia Woitischek

Workshop Participants

First Name	Last Name	Institute
Mariano	Agusto	Universidad de Buenos Aires
Alessandro	Aiuppa	Università di Palermo - DiSTeM
Patrick	Allard	CNRS-IPGP
Marco	Almeida	Instituto Geofísico-Escuela Politécnica Nacional
Mar	Alonso Cotchico	Instituto Volcanológico de Canarias (INVOLCAN)
Fredy	Apaza	INGEMMET OVI
Santiago	Arellano	Chalmers University of Technology
Charlotte	Barrington	Earth Observatory of Singapore, NTU
Jean	Battaglia	CNRS - UCA - IRD
Benjamin	Bernard	Instituto Geofísico-Escuela Politécnica Nacional
Nicole	Bobrowski	Institut for Environmental Physics, University of Heidelberg
Carlo	Cardellini	Dipartimento di Fisica e Geologia, Università di Perugia
Simon	Carn	Michigan Technological University
Ana Silvia	Casas Ramos	Ludwig-Maximilians-Universität
Bruce	Christenson	GNS Science
Laura	Clor	USGS, Cascades Volcano Observatory
Jorge	Córdova	Instituto Geofísico-Escuela Politécnica Nacional
Florian	Dinger	Max-Planck Institute for Chemistry
Tobias	Fischer	University of New Mexico
Cristobal	Gonzalez	Universidad Católica del Norte
Liz	Gaunt	Instituto Geofísico-Escuela Politécnica Nacional
Alexandra	Gutmann	Johannes Gutenberg-University, Mainz, Germany
Mario	Guzman	Colorado School of Mines
Thorsten	Hoffmann	Johannes Gutenberg University
Silvana	Hidalgo	Instituto Geofísico-Escuela Politécnica Nacional
Martha Lizette	Ibarra Carcache	INETER
Evgenia	Ilyinskaya	University of Leeds
Manuel	Inostroza	Universidad Católica del Norte
Artur	Ionescu	Babes-Bolyai University
Johann	Jacobsohn	Institute of Geophysics, Universität Hamburg
Philippe	Jean-Baptiste	CEA-CNRS
Ryunosuke	Kazahaya	Geological Survey of Japan, AIST
Christoph	Kern	U.S. Geological Survey
Boglárka-Mercédesz	Kis	MTA-ELTE Volcanology Research Group, Eötvös University
Jonas	Kuhn	Institute of Environmental Physics Heidelberg
María Clara	Lamberti	University of Buenos Aires
Allan	Lerner	University of Oregon
Marco	Liuzzo	Istituto Nazionale di Geofisica e Vulcanologia
Taryn	Lopez	University of Alaska Fairbanks Geophysical Institute
Pilar	Madrigal Quesada	Universidad de Costa Rica
Nataliya	Malik	Institute of Volcanology and Seismology
Celine	Mandon	Victoria University of Wellington
Elena	Maters	Université du Littoral Côte d'Opale
Andrew	McGonigle	University of Sheffield
Gladys	Melián Rodriguez	Instituto Volcanológico de Canarias (INVOLCAN)
Masaaki	Morita	Geological Survey of Japan, AIST
Diego	Narvaez	Instituto Geofísico-Escuela Politécnica Nacional
Loic	Peiffer	CICESE
Ulrich	Platt	Heidelberg University

Workshop Participants

First Name	Last Name	Institute
Patricio	Ramón	Instituto Geofísico-Escuela Politécnica Nacional
Andrea	Ricci	University of Bologna
Andrea Luca	Rizzo	Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Palermo
Vincent	Robert	IPGP-OVSG
Christine	Sealing	Drexel University
Hiroshi	Shinohara	Geological Survey of Japan, AIST
Daniel	Sierra	Instituto Geofísico-Escuela Politécnica Nacional
Catarina	Silva	Research Institute for Volcanology and Risk Assessment
Franco	Tassi	University of Florence, Italy
Dario	Tedesco	University of Napoli 2
Jan-Lukas	Tirpitz	Institute of Environmental Physics - University of Heidelberg
Francisco	Vásconez	Instituto Geofísico-Escuela Politécnica Nacional
Freddy	Vásconez	Instituto Geofísico-Escuela Politécnica Nacional
Gabriela	Velasquez	Observatorio Volcanologico de los Andes del Sur
Fátima	Viveiros	IVAR - Instituto de Vulcanologia e Avaliação de Riscos
Simon	Warnach	Max-Planck-Institute for Chemistry
Thomas	Wilkes	University of Sheffield
Julia	Woitischek	University of Cambridge
Martin	Zimmer	GFZ

Participants with Poster Presentations not attending

First Name	Last Name	Institute
Viviana	Burbano	Colombian Geological Survey
Simon	Carn	Michigan Technological University
Alexander	Engln	University of Heidelberg
Alessandro	Fedele	INGV-Napoli
Peter	Kelly	USGS Cascades Volcano Observatory
Eleazar	Padrón	Instituto Volcanológico de Canarias
Thomas	Pering	University of Sheffield
Juan	Sanchez	Centro de Investigacion Cientifica y de Estudios Superiores de Ensenada
Yuri	Taran	UNAM
Elsa	Wilken	University of Heidelberg
Robert	Wright	University of Hawaii at Manoa