



IAVCEI - WORKSHOP 2008
10th Gas Workshop, Mexico, 10th – 20th November, 2008
México City – El Chichón – Popocatepetl - Colima

First circular

Invitation

On behalf of the hosting geochemical community from the Institute of Geophysics, UNAM we are happy to invite the international geochemical scientific group working on volcanic fluids to participate in the 2008 Gas Workshop to be held in Mexico in November 2008.

The main topics of the workshop are the intercomparison on the field of geochemical sampling, remote sensing methods and discussions of the current problems of theory and practice of the volcano degassing.

Pre-Registration Form

IAVCEI - WORKSHOP 2008

November 10-20, 2008

Name: (Prof/Dr./Mr./Mrs./Ms.).....

Institution:.....

Address:.....

City/State/Zip code:.....

Country:.....

Phone:.....

Fax:.....

E-mail:.....

I intend to submit a contribution:.....

Title of contribution:.....

Symposium:.....

Accompanying person:.....

For further information please contact:

Executive Secretary:

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Scientific programme:

The programme will include a scientific meeting focused mainly on geochemistry of volcanic gases.

Themes

Conference

- New techniques, including sample collection, lab analysis and field spectroscopy, for measurement of inorganic, organic gas and aerosol composition (including isotopes) of fumaroles, diffuse emissions and plumes.
- Modeling frameworks for interpretation of volcanic (magmatic) fluid geochemistry
- Atmospheric chemistry of volcanic plumes; environmental and human health impacts of volcanic degassing.
- measurement of volcanic plumes using space-based remote sensing

Field

- Direct Sampling – Crater of El Chichón volcano, boiling-point strong fumaroles, bubbling gas
- Soil & Lake Degassing – Crater floor and crater lake of El Chichón volcano,
- Plume Measurements – Popocatepetl and Colima volcanoes

General information

Mexico is located in North America between the Gulf of Mexico on the east and the Pacific Ocean on the west.

Located in Mexico's central region in a valley with a magnificent backdrop of two volcanoes: Popocatepetl and Iztaccíhuatl. The nation's capital has a pleasant climate with an average year-round temperature of 22° C (72° F).

Mexico City

Known as the City of Palaces, the Federal District has three areas that were declared World Heritage sites by the UNESCO. The first one is the Historic Center, where you can admire beautiful religious and historic buildings like the Catedral Metropolitana and Palacio de Bellas Artes. The other site is Xochimilco Ecological Park, often referred to as the Venice of Mexico due to its beautiful canals. The third site is in fact, the UNAM campus due to its architecture and cultural heritage as represented by the famous murals by Diego Rivera, Juan O'Gorman, José Clemente

Orozco and David Alfaro Siqueiros.

Like most cosmopolitan cities, Mexico City offers a wide variety of cultural events, shopping areas, museums with amazing collections that depict the evolution of Mexico's art and history, from the pre-Hispanic era to present day. In the neighborhoods of Coyoacán and San Angel, near CU, you can enjoy a bohemian atmosphere.

Volcanoes

El Chichón (17°21'40"N, 93°13'50"W, ~1000 m ASL)

El Chichón volcano (17°21'40"N, 93°13'50"W) is a small dome-pyroclastic edifice (1000 m asl and 600 m of the relative elevation) in the State of Chiapas, Mexico, the only active volcano in a short Chiapanecan Volcanic Chain located between Central America Volcanic Arc (CAVA) and Trans-Mexican Volcanic Belt TMVB). The volcanism here is also related to the subduction of the Cocos plate, but differs from a typical calc-alkaline volcanism of CAVA and TMVB due to a special geometry of the subducting slab. The eruption products of El Chichón are mostly andesitic to trachyandesitic pyroclastic deposits and its activity is characterized by catastrophic dome-destroying explosions ~ every 500 years. The last eruption occurred in 1982. The central dome was completely destroyed and a 200 m-deep, 1 km-wide crater was formed which immediately was occupied by an acidic (pH~0.5), saline (Cl ~ 25,000 ppm) and hot (>50°C) lake. 25 years after the eruption there is still no a new dome growing in the crater as this was typical for volcanoes with similar type of eruptions.

El Chichón volcano has a well developed, powerful hydrothermal system. Fumarolic field on the later destroyed central dome and several groups of hot springs on slopes of the volcano, each one less than 3 km from the crater, have been discovered before the 1982 eruption. After the eruption the total discharge from these springs was estimated to be > 350 kg/s of water with temperature of 70°C and chloride content of 2000 ppm. The crater lake is slightly acidic (pH 2.3-2.7), very shallow and variable in size and the water chemistry. Several groups of fumaroles on the crater floor and inner slopes discharge low-temperature steam with a low HCl and SO₂ content. The NE group is characterized by a moderate pressure of fumaroles and convenient for the sampling.

Volcán Popocatepetl (19.023° N; 98.622° W; 5465 masl)

The name comes from the *Náhuatl* language and means "Smoking Mountain". This volcano is located in central México at the southern edge of the Sierra Nevada and represents the current volcanic front of the active volcanic arc known as Trans-Mexican Volcanic Belt. Popo (volcano's nickname) is a dacitic, ice-capped, old and steep stratovolcano. The modern cone was constructed after the destruction of a previous one (El Fraile volcano) 20,000 years before present (BP). Popocatepetl is known to have produced a number of Plinian eruptions since the beginning of the Holocene. and experienced several episodes of violent-explosive activity, until about 1,200 years BP, after which the current, mildly explosive phase began. Frequent historical eruptions have been recorded since the beginning of the Spanish era. Most historical eruptions were apparently mild-to-moderate vulcanian steam and ash emissions, with larger explosive eruptions in 1518-1528 and 1663-1664. Activity in 1920-27 produced intermittent explosive eruptions and a small lava plug in the summit crater. The current eruption started in 1994 and was predominantly explosive (vulcanian) in nature during 1995, after 1996 there has been an alternation of effusive events that build dacitic lava domes that are destroyed afterwards by explosive events. One of the most remarkable issues of this eruption is the large amount of volcanic gases released during these years establishing several historic records in emission rates (up to 170,000 tons/day of SO₂).

Popocatepetl is located 55 kilometers east of Mexico City, Mexico, and 45 kilometers west of the Puebla metropolitan area. The volcano separates Mexico and Puebla Valleys, both with more than 20 million inhabitants. México City (population 18 million) and Puebla (population 2 million). More than 30 million people live within view of the volcano and hundreds of thousands of people would be endangered by hazards associated with a large explosive eruption of the volcano. A major eruption would have serious consequences for people living in communities on the flanks of the volcano, and ash from such an eruption could also endanger aircraft using Mexico City international airport.

Volcán de Fuego de Colima (19°30'44"N; 103°37'02"W; 3860 masl)

Widely known as Colima, this volcano is located in western México at the southwestern edge of the active volcanic arc known as Trans-Mexican Volcanic Belt, this andesitic stratovolcano is the most active volcano in Mexico. During the last 500 years, it has had frequent minor eruptive activity with more than 30 explosive eruptions, the most prominent in 1585, 1606, 1622, 1690, 1818, 1869, 1890, 1903, and 1913. More recently, in 1991, a lava dome grew and collapsed producing several glowing avalanches or pyroclastic flows. The effusive activity of November 1998 was followed by strong explosive activity with eruptive columns higher than 10 km and producing ash falls within 30 km from the vent, and large pyroclastic flows in a radius of 15 km from the vent. The latest eruptive phase has not ended, resembling the eruptive pattern of the large eruptions of 1818 and 1913.

This volcano endangers at least 28 villages and cities of the states of Colima and Jalisco. Besides the possible effects of the eruptive activity on life, society and human activity in general, the impacts of volcanic activity on infrastructure is very important due to the proximity of the Guadalajara-Colima highway to the volcano, and the Colima and Manzanillo airports.

Field trips

Volcanic areas:

El Chichón volcano, 1100 m ASL in the state of Chiapas, 750 km to SE from Mexico City.

Popocatepetl volcano, 5470 m ASL, 60 km E from Mexico City

Colima volcano, 3850 m ASL, 700 km SWW from Mexico City

Important dates:

First circular

January 2008

Second circular

February 2008

Abstract dead-line & Early registration

April 2008

Workshop

November 2008

Organizing committee:

Hugo Delgado Granados, President

Dmitri Rouwet, El Chichón fieldwork

Nick Varley, Remote sensing

Julie Roberge, Logistics

Executive Secretary:

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