

MILLENNIUM INSTITUTE ON VOLCANIC RISK RESEARCH, **CKELAR VOLCANOES**

Impact Area: Earth sciences and risk management.
Speciality: Volcanology

Chile is one of the countries with the largest number of volcanoes in the world: 1,500 throughout its territory. At least 90 of these volcanoes are active or potentially active (eruptive activity in the last 10 thousand years), and have been the focus of various catastrophic events, such as the eruptions of the Villarrica (1971), Navidad (1988), Hudson (1991) and Chaitén (2008) volcanoes. Although most of the eruptions in historical times have been concentrated in the south of Chile, large eruptions such as that of the Lascar volcano (1993) have also occurred in the northern area.

Although the number of people that lives around active volcanoes in the north of Chile is smaller compared to the south of the country, there is an important connection with them due to cultural and economic factors. Added to this is a wide diversity of critical infrastructure and economic activities around these active massifs such as drinking water, electricity, border crossings, mining and railways, among others.

There is little knowledge of the recurrence rates, magnitudes of volcanic eruptions and their impact on the communities and infrastructure surrounding active volcanoes in northern Chile and, to develop precisely that knowledge, the Millennium Ckelar Volcanoes Institute was created. Its vision is to form a globally recognized advanced scientific team of excellence to provide and communicate knowledge about volcanic processes and volcanic risk mitigation.

Research lines:

- Physical and chemical processes.
- Deformation in volcanic systems.
- Volcanic hazards.
- Infrastructure vulnerability.
- Human resilience.

Millennium Institute



>> SCIENTIFIC PRODUCTIVITY:

ISI-WOS: 24
Other publications: 1





>> CONTACT:

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>> OUTREACH ACTIVITIES:

- Volcanoes have their science: Series of international talks on volcanic knowledge.
- Audiovisual series about volcanologists and their passions called "Locos x Los Volcanes".
- VolcanoFest: Volcanic science dissemination party that has already visited more than 7 cities in Chile, in Antofagasta, the Metropolitan Region and Concepción.
- Virtual ascent to the Lascar volcano: made with 360 cameras to make a virtual expedition to one of the most active volcanoes in northern Chile.

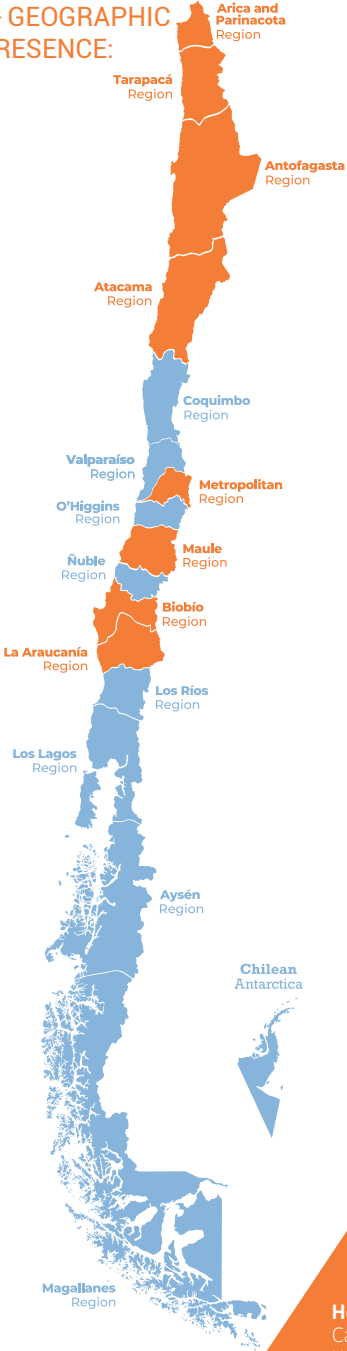
>> RESEARCHERS:

Associate Researchers:
Joseline Tapia, Verónica Oliveros
Daniel Díaz, Rodrigo González, Mahesh
Shrivastava, Paulina Vergara, Juan
Pablo Oyanedel.

Assistant Researchers:
Luis Lara, Andrei Maksymowicz,
Adriana Aránguiz.

Junior Researchers:
Katarzyna Anna Slezak, Álvaro
Aravena.

>> GEOGRAPHIC PRESENCE:



>> MAIN ACHIEVEMENTS:

- Form the first Millennium Institute in the northern macro zone dedicated to Earth Sciences.
- Receive the "Mente et Malleo" award, which highlights groups of scientists dedicated to the development of Earth Sciences in Chile by the College of Geologists of Chile.
- Develop a Fluid Geochemistry laboratory, a replica of a laboratory that is more than 40 years old in Italy, for the analysis of volcanic fluids in Chile.
- Develop an international course on Geochemistry of Volcanic and Geothermal Fluids, CIGEFU, which brought together volcanologists from Portugal, the United Kingdom, the United States and Chile.
- Investigate, observe and study for the first time in Chile molten sulfur flows in active volcanoes in the Lastarria volcano, located in northern Chile.