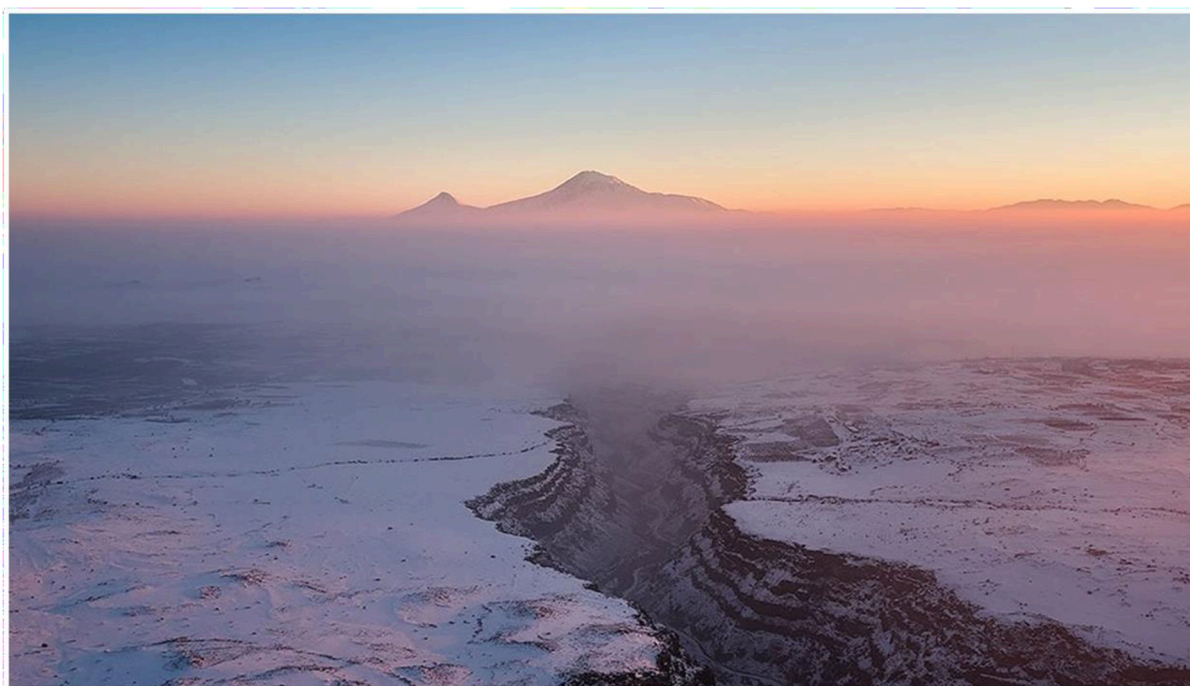




CONTINENTAL COLLISION ZONE VOLCANISM AND ASSOCIATED HAZARDS

International Conference



September 03-08, 2023
Yerevan, Armenia





**ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ԳԻՏՈՒԹՅՈՒՆՆԵՐԻ
ԱԶԳԱՅԻՆ ԱԿԱԴԵՄԻԱ**

ԵՐԿՐԱԲԱՆԱԿԱՆ ԳԻՏՈՒԹՅՈՒՆՆԵՐԻ ԻՆՍՏԻՏՈՒՏ

**ՀՐԱԲԽԱԿԱՆՈՒԹՅԱՆ ԵՎ ԵՐԿՐԻ ԸՆԴԵՐՔԻ ՔԻՄԻԱՅԻ
ՄԻՋԱԶԳԱՅԻՆ ԱՍՈՑԻԱՑԻԱ**

ՀՀ ԿԳՄՍՆ

ԲԱՐՁՐԱԳՈՒՅՆ ԿՐԹՈՒԹՅԱՆ և ԳԻՏՈՒԹՅԱՆ ԿՈՄԻՏԵ

**«ԿՈԼԼԻԶԻՈՆ ԳՈՏՈՒ ՀՐԱԲԽԱԿԱՆՈՒԹՅՈՒՆԸ ԵՎ
ԱՌՆՉՎՈՂ ՎՏԱՆԳՆԵՐԸ»**

ՄԻՋԱԶԳԱՅԻՆ ԳԻՏԱԺՈՂՈՎ

**ԳԻՏԱԺՈՂՈՎԻ ԾՐԱԳԻՐ
ԷՔՍԿՈՒՐՍԻԱՆԵՐԻ ԾՐԱԳԻՐ
ՍԵՂՄԱԳՐԵՐԻ ԺՈՂՈՎԱԾՈՒ**

03-08 Սեպտեմբեր 2023

Հետ-կոնֆերանսային էքսկուրսիաներ 09-11 Սեպտեմբեր, 2023

ԵՐԵՎԱՆ, ՀԱՅԱՍՏԱՆ



ԵՐԵՎԱՆ-2023



NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF ARMENIA

INSTITUTE OF GEOLOGICAL SCIENCES

**INTERNATIONAL ASSOCIATION OF VOLCANOLOGY AND CHEMISTRY OF THE EARTH'S
INTERIOR**

HIGHER EDUCATION AND SCIENCE COMMITTEE OF REPUBLIC OF ARMENIA

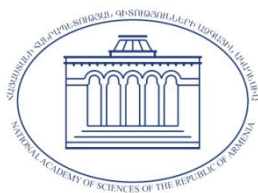
**“CONTINENTAL COLLISION ZONE VOLCANISM AND
ASSOCIATED HAZARDS”
INTERNATIONAL CONFERENCE**

**CONFERENCE PROGRAM
EXCURSIONS PROGRAM
ABSTRACTS VOLUME**

03-08 September 2023

Post-conference field trips 09-11 September 2023

YEREVAN, ARMENIA



YEREVAN – 2023

CONFERENCE PROGRAM

**03-08 September, NATIONAL ACADEMY OF SCIENCES OF THE
REPUBLIC OF ARMENIA, M. Baghramyan Avenue 24**

03 SEPTEMBER

***Icebreaker: reception meeting at the Geological Museum of the
Institute of Geological Sciences of Armenian National Academy
of Sciences, At 18.00, M. Baghramyan Avenue 24a***

04 SEPTEMBER

Hall of Presidium of the National Academy of Sciences of the Republic of Armenia

M. Baghramyan Avenue 24a

9:00-10:00 Registration

10:00-10:30 Opening and welcome address by:

President of the Armenian National Academy of Sciences, **Academician Ashot Saghyan**

Director of the Institute of Geological Sciences, of Armenian National Academy of Sciences

Dr. Sci. Khachatur Meliksetian

Director of Mineralogical Museum, named after A. Fersman, Moscow Russia, **Prof. Pavel Plechov**

Director of Department of Earth and Environmental Sciences of the Ludwig Maximilian University of Munich, Germany, **Prof. Donald Dingwell**

Earth & Environmental Sciences at Lehigh University, USA, **Prof. Dork Sahagian**

School of Earth and Environment, University of Leeds, UK **Dr. Ivan Savov**

10:30- 11:00 - Coffee break

PLENARY SESSION, KEYNOTE LECTURES:

Chairperson: Dr. Khachatur Meliksetian

11:00-11:30 Julian Pearce. Geochemical interpretation of collision volcanism.

11:30-12:00 Donald Dingwell. Melt chemistry and the eruptive properties of high silica explosive systems

12:00-12:30 Dork Sahagian. Drivers of explosive volcanic eruptions.

12:30-13:00 Karoly Nemeth. Volcanic architecture of one of Earth’s largest long-lived mature intracontinental monogenetic volcanic province: western Arabian Peninsula.

13:00- 14:00 - Lunch break

PLENARY SESSION, KEYNOTE LECTURES:

Chairperson: Prof. Donald Dingwell

14:00-14:30 Khachatur Meliksetian. Collision related volcanism of Armenia: geodynamic setting and geochemistry.

14:30-15:00 Ivan Savov. Generation of petrologically and isotopically unique post collisional magmatic reservoir under Armenia.

15:00-15:30 Charles Connor. Building lava flow libraries to assess lava flow hazards in distributed volcanic fields.

15:30- 16:00 - Coffee break

SESSION I. GEOCHEMICAL FINGERPRINTING OF VOLCANISM, CONVERGENT MARGIN VOLCANISM:

Chairperson: Dr. Ivan Savov.

16:00-16:20 Pavel Plechov. Evolution of Island-arc magma sources: from primitive to mature arc.

16:20-16:40 Iain Neill. Re-thinking Caledonian collision magmatism in Scotland, and related ideas for Armenian studies.

16:40-17:00 Vadim Kamenetsky. Volatiles in kimberlite magmas – what drives ascent and causes explosive eruption?

17:00-17:20 Eilish Brennan. Boron and B-Sr-Nd isotopes as tracers of FME and volatile enrichments in the mantle source of Kamchatka arc basalts, insights from Kozelsky, Avachinsky and Khangar mafic series.

17:20-17:40. Anna Volynets. Arc monogenetic volcanism in the active fault zone (Sredinny range of Kamchatka): geochemical diversity of volcanic rocks and magmatic melts.

17:40-18:00 S. Heidari. Post collision evidences of magmatism in the NW of Iran.

05 SEPTEMBER

SESSION I. GEOCHEMICAL FINGERPRINTING OF VOLCANISM, CONVERGENT MARGIN VOLCANISM:

Chairperson: Prof. Karoly Nemeth

09:00-09:20 Olga Bergal-Kuvikas. Monogenetic volcanism in Malko-Petropavlovsk zone of transverse dislocations, Kamchatka.

09:20-09:40 Vesta Davydova. Copper redistribution from shallow oxidized magmas to mafic enclaves under Bezymianny volcano, Kamchatka.

09:40-10:00 Ghazar Galoyan. The earliest mesozoic manifestations of volcanism in the Lesser Caucasus (Republics of Armenia and Karabagh) in the Jurassic.

10:00-10:20 George Ovsyannikov. Mineral associations of middle Jurassic island-arc Pervomay-Ayudag intrusive complex, Crimea: genetical evolution and melt modelling.

10:20- 11:00 - Coffee break

11:00-11:20 Vasily Shcherbakov. Geochemical, isotopic and petrological constraints on the origin and evolution of the recent silicic magmatism of the Greater Caucasus.

11:20-11:40 M. Shchekleina. Pre-eruptive magma chamber conditions of the Rauchua tephra.

11:40-12:00 Tahereh Parsa. Late Cenozoic volcanic rocks of northern Zanjan, NW Iran.

12.00–13.00 UNIFIED POSTER SESSION

Igor Nikogosian. Geochronology and geochemistry of Mesozoic basic magmatism and geodynamics of South Armenian block.

Aazd Karimi. The research of post-collisional adakites in central Iran, Urumiyeh-Dokhtar magmatic belt.

Shirin Koochi. Ultrapotassic volcanism from Islamic peninsula, NW Iran.

O. Khubaeva. Hydrothermal eruptions in the coastal zone of Iturup island (Kuril islands).

Gevorg Navasardyan. Volcano-tectonic interactions and transition from polygenetic to monogenetic volcanism in the Lesser Caucasus (Armenia).

Ara Avagyan. Surface ruptures of volcano-gravitational origin on the territory of the Republic of Armenia.

Rogelio Ramos Aguilar. Geoscientific analysis of structural collapses in the city of Juan C. Bonilla, Puebla, Mexico (2021).

A. Khomchanovsky. Hazard to the coast after powerful earthquakes.

Jing-Hui Tong. Regional variations in azimuthal anisotropy in the upper mantle beneath the eastern anatolia-caucasus: effect of recent lithospheric delamination.

Giada Fernandez. New insights into middle-late Pleistocene volcanic activity from Campi Flegrei (~ 160 - 90 ka).

Edmond Grigoryan. Plinian fall deposits from Ararat stratovolcano preserved in Armenia.

Gayane Grigoryan. The essence of geotourism at the department of volcanology, Geological museum named after professor H. Karapetyan of IGS, NAS Armenia.

R. Gasparyan. On the issue of the prospects of the Jermakhbyur geothermal system of the Syunik marz of the RA.

Anton Nuzdaev. Accumulations of mercury in altered rocks in thermal fields of the Bolshoi Semyachik volcanic massif (Kamchatka, Russia).

A. Kupchinenko. Secondary mineral formation on the surface of geothermal fields of the Bolshoi Semiachik volcanic complex, Kamchatka, Russia.

13:00- 14:00 - Lunch break

SESSION II. VOLCANISM AND GEODYNAMICS, VOLCANO-TECTONIC INTERACTIONS, VOLCANIC HAZARD ASSESSMENT

Chairperson: Prof. Dork Sahagian

14:00:14:20 Peter LaFemina. Cascading hazards in a migrating forearc-arc system: earthquake-earthquake and earthquake-eruption triggering in

Nicaragua.

14:20-14:40 Abdulrahman Alsowaigh. Monitoring of volcanic activity of one of the youngest active monogenetic volcanic field (Harrat) around Al Madinah, Western Saudi Arabia.

14:40-15:00 Yoshiyuki Yasuike. Considerations on volcanic hazard assessment for safety evaluation of nuclear facilities in Japan.

15:00-15:20 Khachatur Meliksetian. Probabilistic volcanic hazard assessment of Armenian nuclear power plant according to IAEA guidelines.

15:20-15:40 Ara Avagyan. Prehistoric petroglyphs showing a volcanic eruption.

15.40–17.00 CONTINUATION OF UNIFIED POSTER SESSION AND COFFEE BREAK

17:00-17:20 Katie Preece. New $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of Debed lavas, Northern Armenia.

17:20-17:40 Priya Minhas The evolution, eruptive recurrence rates and behaviour of monogenetic volcanism in the Gegham highlands, Central Armenia.

17:40-18:00 Monireh Kheirkhah. A brief summary of late Cenozoic collision magmatism across Iran.

06 SEPTEMBER

MID-CONFERENCE EXCURSION DAY 1, SEPTEMBER 06

(see pages 16-20 for details)

**09:30 from the National Academy of Sciences of the
Republic of Armenia**

07 SEPTEMBER

SESSION III. VOLCANO-SEISMOLOGY, GEOPHYSICS, SEISMIC TOMOGRAPHY:

Chairperson: Dr. Lilit Sargsyan

09:00-09:20 Tai-Lin Tseng. The Transition of Crustal Properties, Lithospheric Thickness and Mantle Deformations in the Eastern Anatolia-Caucasus: Volcanisms Correlated?

09:20-09:40 Jean-Philippe Métaxian. Monitoring volcanic activity using dense

networks of seismic sensors.

09:40-10:00 Andrew Bell. What might we expect from seismicity at volcanoes reawakening after long periods of dormancy? – lessons from recent unrest in Ecuador.

10:00-10:20 Elya Sahakyan. The features of seismic activity in the Gegham volcanic ridge (Armenia) determined by the temporary installed seismic network.

10:20-10:40 Jing-Hui Tong Regional variations in azimuthal anisotropy in the upper mantle beneath the Eastern Anatolia-Caucasus: effect of recent lithospheric delamination

10:40- 11:00 - Coffee break

SESSION IV. IGNIMBRITES AND PLINIAN ERUPTIONS:

Chairperson: Dr. Jean-Philippe Métaxian

11:00-11:20 Ulrich Küppers. Message in a pyroclast.

11:20-11:40 Hripsime Gevorgyan. Volcano-magmatic evolution of the "shield-like" Aragats stratovolcano, Armenia.

11:40-12:00 Gino González. Long-lasting eruption cycle of the caldera-forming Neapolitan Yellow tuff, Campi Flegrei, Italy

12:00-12:20 S. Smirnov. Formation of voluminous dacitic magmas of large caldera eruptions through a partial melting of amphibole-bearing shallow crust in southern Kuril Islands.

12:20-12:40 G. Portilla. On the influence of volcanism on climate change from a geological point of view.

12:40-13:00 Mehmet Bayraktutan. Erzurum Neogene caldera, Eastern Turkey: volcanic structures and active tectonics

13:00- 14:00 - Lunch break

SESSION V. VOLCANISM AND GEOTHERMAL ENERGY RESOURCES:

Session sponsored by PEER Sciences Project 9-252: Assessment of geothermal energy resources and natural hazards in Armenia

Chairperson: Prof. Clive Oppenheimer

14:00-14:20 Khachatur Meliksetian. Assessment of deep geothermal energy potential in Armenia

14:20-14:40 Natasha Toghramadjian. Application of ambient noise tomography (ANT) for geothermal exploration (Gegham volcanic ridge area) preliminary results.

14:40-15:00 E. Zhitova. Structural mineralogy and features of formation of a number of complex iron sulfates from low-temperature volcanic environments of Kamchatka.

15:00-15:20 Alexander Belousov. Periodicity of geyser eruptions: 82 years of observations in Kamchatka Peninsula, Russia.

15:20-15:40 Narek Sahakyan. Initial assessment of the geothermal potential of the thermomineral waters of the Hrazdan river middle stream catchment in Armenia.

15:40- 16:00 - Coffee break

16:00-17:00 Summary and conclusions

19:00 CONFERENCE DINNER AT PANDOK YEREVAN RESTAURANT,

ADDRESS: 91 TERYAN STREET

08 SEPTEMBER

MID-CONFERENCE EXCURSION DAY 2, SEPTEMBER 08

(see pages 20-27 for details)

**09:00 from National Academy of Sciences of the Republic of
Armenia**

SEPTEMBER 09,10,11

POST-CONFERENCE EXCURSIONS,

(see pages 28-37 for details)