

OCGC Seminar

Sulfur in magmas: from porphyry Cu-Au deposits to “excess sulfur” in volcanic eruptions

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University of Ottawa

Advanced Research Complex

Room 233

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Université d'Ottawa

Advanced Research Complex

Chambre 233

Sulfur is a minor volatile constituent in magmas, yet it is a key player in magmatic-hydrothermal ore genesis and also is primarily responsible for the climate and environmental impact of volcanic degassing.

This presentation will quantitatively address the geochemical behavior of sulfur during the differentiation and degassing of magmas in the Earth's upper crust, including aspects such as partitioning between silicate melts and aqueous fluids, the stability of magmatic sulfides and anhydrite in volatile-saturated magmas and the dynamic redistribution of sulfur between various phases during magma evolution.

The above information will be presented alongside data highlighting the roles of S in the mass transfer of chalcophile ore metals such as Au, Cu and Ag in magmatic and associated hydrothermal systems. In addition, the presentation will address what the most favorable conditions are to yield volcanic eruptions that introduce anomalously high amounts of sulfur into the Earth's atmosphere.

Professor Zajacz's earned his PhD at E.T.H Zurich in 2007. He went on to work as a postdoctoral fellow at the University of Maryland (Marie Currie International Outgoing Fellow, 2007-2010) and E.T.H. Zurich (SNSF Amizione Fellow, 2011-2013). In 2014, he accepted a position as assistant professor at the University of Toronto, where he leads the Magmatic and Ore-forming Processes Research Laboratory. In 2015 Dr. Zajacz was awarded the Waldemar Lindgren Award by the Society of Economic Geologists for his outstanding contributions to the field of economic geology. Professor Zajacz's research focuses on the mass transfer of elements in high-pressure-temperature fluids in the Earth's lithosphere. For more information about Dr. Zajacz's work, please visit: es.utoronto.ca/people/faculty/zajacz-zoltan/

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