

Paleoclimatic records from Bolivian glaciers

P Ginot^{1,2}, A. Rabatel³, A. Soruco²

¹ Observatoire des Sciences de l'Univers de Grenoble, IRD/CNRS/UGA, Grenoble, France

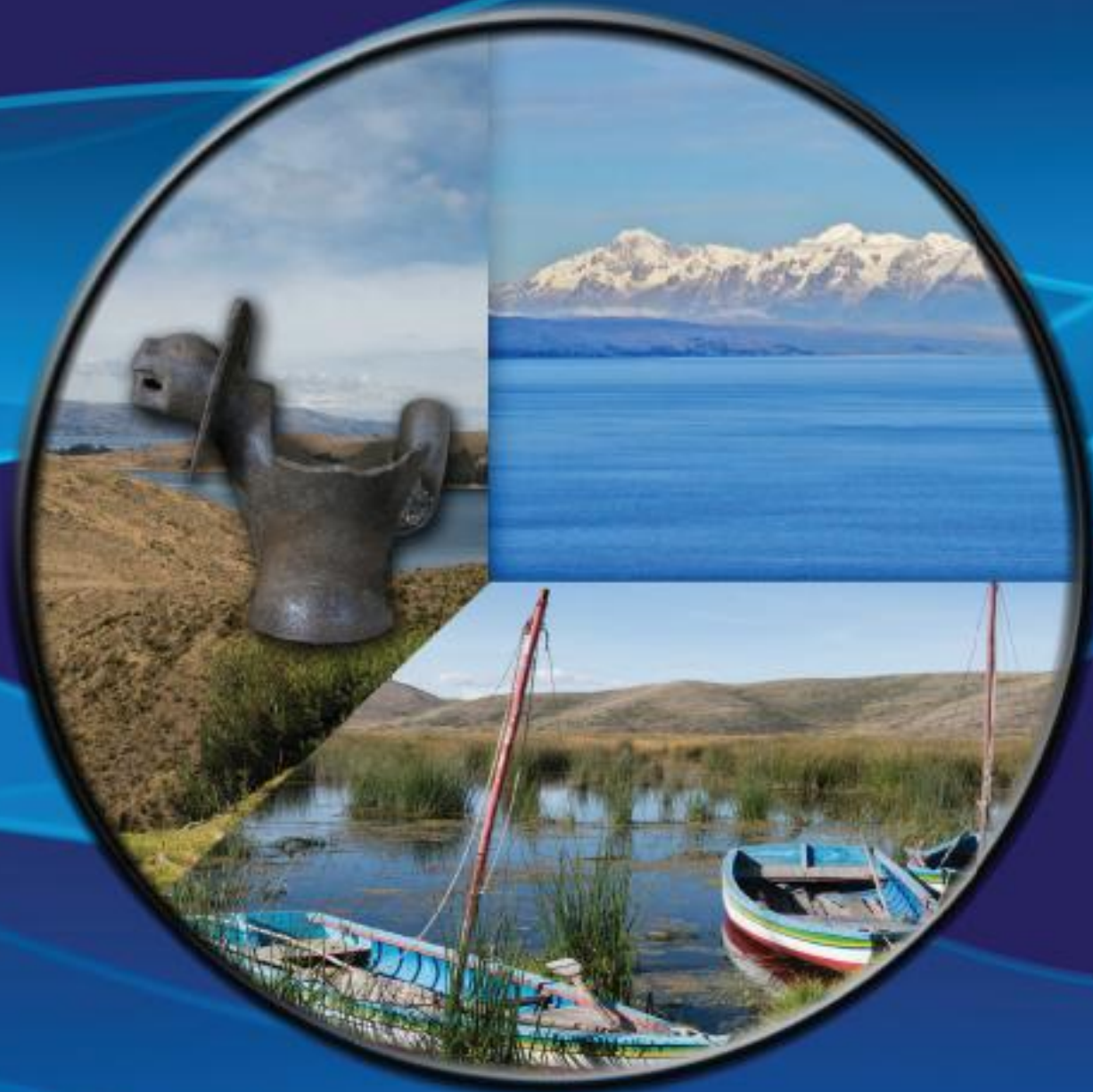
² Universidad Mayor de San Andrés, Cota Cota, La Paz, Bolivia

³ Laboratoire de Glaciologie et Géophysique de l'Environnement, Grenoble, France

Abstract:

In the Andes, especially in Bolivia, the glaciers studies allows to reconstruct the evolution of past climate at different time scales, from seasonal variations to the Last Glacial Maximum. At short scale with instrumental data, the study of ablation/accumulation processes were used to establish the relationships between glacier mass and surface changes and weather/climate variables such as El Niño events or recent global warming. In this recent period, the glaciers show strong general retreat all over the Andes. The evolution of the glacier surface, observed by aerial pictures or reconstructed from different moraine stages informs us about their evolution since the Little Ice Age or longer with some fluctuations in a shrinking phase. Ice cores extracted from highest Andean glaciers extend these reconstructions to the Last Glacial Maximum.

COLOQUIO INTERNACIONAL SOBRE LA CONTAMINACIÓN ACTUAL E HISTÓRICA EN LOS ECOSISTEMAS ACUÁTICOS ANDINOS



La Paz, 3 al 5 de mayo de 2016
Universidad Mayor de San Andrés, Cota Cota, La Paz





Proceedings

**International colloquium on current and ancient contamination in
Andes aquatic ecosystems**

**Coloquio internacional sobre la contaminación actual y histórica
en los ecosistemas acuáticos Andinos**

**Colloque international sur la contamination actuelle et historique
des écosystèmes aquatiques andins**

La Paz – May 3rd – 5th 2016

Universidad Mayor de San Andrés – Campus de Cota-cota, La Paz

Organization direction:

Stéphane Guédron (ISTerre-IRD/UMSA): stephane.guedron@ird.fr

Dario Acha Cordero (LCA/UMSA): darioacha@yahoo.ca

Marc-Antoine Vella (IFEA): mav.vella@gmail.com

Oswaldo Eduardo Ramos Ramos (IIQ/UMSA) : rroe@kth.se

Organization committee:

Stéphane Guédron (ISTerre-IRD/UMSA): stephane.guedron@ird.fr

Dario Acha Cordero (LCA/UMSA): darioacha@yahoo.ca

David Amouroux (LCABIE-IPREM/CNRS): david.amouroux@univ-pau.fr

Marc-Antoine Vella (IFEA): mav.vella@gmail.com

Christophe Delaere (ULB): Christophe.Delaere@ulb.ac.be

Oswaldo Eduardo Ramos Ramos (IIQ/UMSA) : rroe@kth.se

Mauricio. R. Ormachea Muñoz (IIQ/UMSA) : maurormache@gmail.com

Jorge Quintanilla (IIQ/UMSA): ceedi77@gmail.com

David Point (GET-IRD/UMSA): david.point@ird.fr

Céline Duwig (LTHE-IRD/UMSA): celine.duwig@ird.fr

General Planning

- **May 3rd 2016: Contamination and eutrophication of Lake Titicaca**

AM session: Mercury biogeochemistry and contamination of aquatic ecosystems of the Andes region

Keynote Lecture: Hg contamination in Latin America: the past is not what we think, nor the future (J.-R. Davee Guimarães).

PM session: Chemical contamination, eutrophication and monitoring of Lake Titicaca and its watershed

Keynote Lecture: Eutrophication of the Cohana Bay (D. Acha).

- **May 4th 2016: Arsenic issues in the Andes**

AM session: Arsenic biogeochemistry and contamination of aquatic ecosystems of the Andes region

Keynote Lecture: Arsenic contamination of groundwater (Chile) (G. Lobos).

PM session:

Workshop 1: Arsenic and mercury speciation.

Workshop 2: Paleoenvironmental studies in the Andean altiplano.

- **May 5th 2016: Historical reconstructions of the human-climate interactions in the altiplano: implication of archeological purposes**

AM session: Paleo-environmental reconstruction of Altiplano's archives

Keynote Lecture: Holocene Paleoclimatic and Paleoenvironmental History of the Lake Titicaca Basin (S. Fritz & P. Baker).

PM session: Archeology: historical human – environment interactions

Keynote Lecture: Recent contribution of terrestrial and subaquatic archeological investigation in Lake Titicaca (C. Delaere & M-A. Vella).