

# IAG Webinar South & Central America



2nd March 13:00 CET (09:00 UTC-3)

Coordinators: Andrea Coronato (CADIC-CONICET, Argentina) and Grace Alves (UFBA, Brasil)

INTERNATIONAL GEOMORPHOLOGY WEEK 2022



09:15 – 10:15

## Glacial geomorphology and geochronology in Central Chile since the last 20.000 yrs. to the present

*Hans Fernández Navarro, Universidad Católica de Chile, Chile*

The margins of Universidad Glacier (34°S) in the Chilean Andes are reconstructed. Cosmogenic Nuclides Dating (10Be) in erratic boulders on moraines was used to establish the glacial geochronology. Four moraines along 20 km of the valley were found. They were labeled as UNI I-IV, from distal to proximal. UNI I represents a glacier between 137±5.4 to 51.9±2 kyr. UNI II yielded exposure ages of 21.8±0.7 to 15.7±1 kyr. Another glacier pulse (UNI III) occurred between 14.4±1 and 9.7±0.9 kyr. UNI IV is a morainic complex produced between the 13th and mid to end 20th centuries.



10:15 – 11:15

## Pedogeomorphology and weathering in the periglacial environment of Maritime Antarctica

*Dr. Davi do Vale Lopes, UFRN/CERES, Brazil*

Despite progress in the last decade on periglacial geomorphology and permafrost research in Antarctica, many knowledge gaps remain. This study aimed to identify and describe the main periglacial landforms of Maritime Antarctica and investigate their relationships with soils and lithological diversity. Two landscape domains are identified: sedimentary rock areas with paraglacial processes and igneous rock areas with periglacial processes. The existence of vegetated marine terraces is unique and suggests greater stability. Landforms associated with patterned ground and permafrost were identified.



11:15 – 12:15

## How to approach Quaternary climates from geomorphology? "Climatic" landscapes of the Andean and extra-Andean Patagonia

*Agustina Reato, CIEMEP-CONICET, UNPSJB, Argentina*

The Upper Cenozoic cold climate conditions affected the entire Patagonian Andes during the glaciations, causing as well, important changes in the Precordillera and extra-Andean region. The mapping and field control of geological, geomorphological and sedimentary products allowed the identification of periglacial, glacial and glaci-fluvial landforms, gravitational units and closed basins related to the glacial events. The morpho-stratigraphic analysis of these landforms permitted the recognition of a similar pattern of cold climate events in the Andean and extra-Andean region, with increasingly warmer and arid climates from the Pliocene to the present.



14:00 – 15:00

## Biogeomorphic analysis of tapir trails using high-resolution UAV surveying in a neotropical highland forest

*Sebastián Granados Bolaños, University of Padova, Italia*

Possible bio-geomorphological relationships between post-glacial lagoons, high-altitude vegetation, and tapirs (*Tapirus bairdii*) are analyzed using unmanned aerial vehicles (UAV). These exploratory and preliminary results show a new high-resolution approach between the lagoon characteristics, the vegetation, and the tapir trail network used for feeding and mobilization of these animals in tropical environments.



15:00 – 16:00

## Fluvial plain and aeolian dune field of the Middle Sao Francisco river: geomorphology, chronology of deposits and succession of geological events in the Quaternary of Brazil

*Dr. Patricia Mescolotti, UNESP, Brazil*

Large rivers are dynamic systems whose evolution depends on internal and external forces. This study discusses the geomorphology and dynamics of one of the main Brazilian rivers (São Francisco) and the largest continental eolian system in Brazil (Xique-Xique). We used geomorphological and sedimentological analyzes combined with optically stimulated luminescence dating. Ten geomorphological zones were mapped and dated, and phases of fluvial aggradation/incision and eolian activity/stabilization phases were recognized. These two systems respond differently to climatic triggers. The studied area is an exceptional case of fluvio-eolian interaction in the Quaternary of Brazil.



16:00 – 17:00

## Features of Holocene coastal dynamics using gorradar in Laguna de Rocha Bar, Uruguay

*Leticia González, Centro Universitario Regional del Este, Udelar, Uruguay*

Through the survey of GPR (Ground Penetration Radar) profiles, using an 80 MHz antenna in a total of 14 profiles with an average length of 1000 m, subsurface sedimentary patterns were identified in the sandy barrier of Laguna de Rocha. The reflectors indicate two behaviors. SW-NE trend profiles indicate an aggregational stacking pattern. The profiles parallel to the coastline show a transgressive behavior, where the reflectors have a retrograding stacking pattern towards the continent. This suggests that the projections of the internal coast of the barrier are associated with a retrograding stacking of the system.