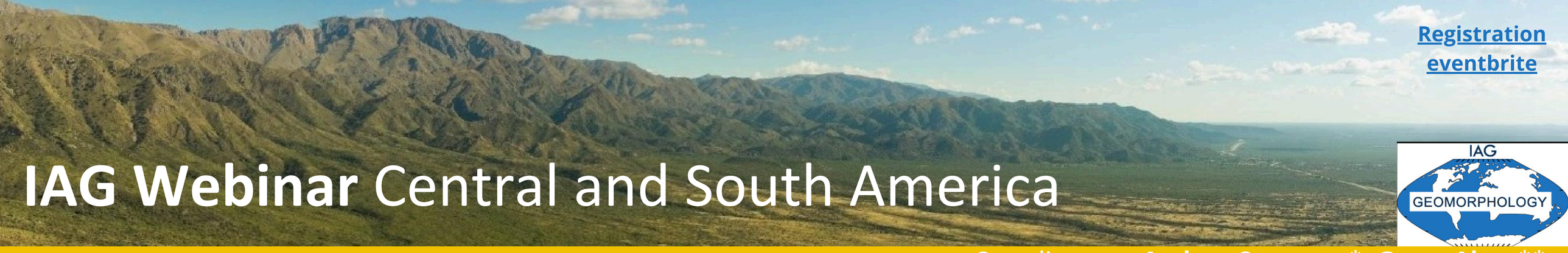


IAG Webinar Central and South America

Registration eventbrite

March 5, 2025 **TIME**: **9h AM** (Argentina/Chile/Brazil (UTC -3); **7h AM** (Colombia (UTC -5); **6h AM** (Costa Rica (UTC -6); **12h AM** (UTC +1)

Coordinators: **Andrea Coronato***, **Grace Alves****
**CADIC-CONICET, Argentina; **Universidade Federal da Bahia, Brazil*

INTERNATIONAL GEOMORPHOLOGY WEEK 2025

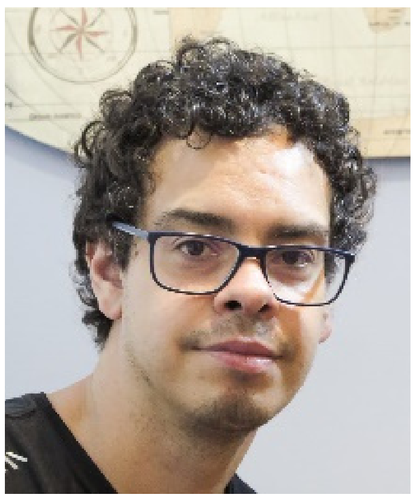
9:10 - 9:40

The western piedmont of the San Luis range: geomorphological evolution of a landscape of Sierras Pampeanas, Argentina

***Jael Aranda**, University of San Luis, Argentina*

The western piedmont of the San Luis range constitutes a particular and well differentiated area within the morphotectonic scheme of the Sierras Pampeanas. Genetically, it is linked to the escarpment of the homonymous fault, of inverse character. It is formed by alluvial deposits, grouped into three levels, located at different heights and with incision relations between them. In the northern portion this configuration is interrupted by a morphostructure, interpreted as piedmont foreland, which conditions the limits of the sedimentary basin and, consequently, the characteristics of the alluvial deposits.

9:40 - 10:10



The 'La Tatacoa' desert as a result of the dynamics of the Upper Magdalena River basin in the Colombian Andes

***Daniel Henrique de Souza**, Pontificia Universidad Católica del Perú (PUCP), Peru-Brazil*

The La Tatacoa Desert, a Cenozoic basin nestled between the Central and Eastern Cordilleras of the southern Colombian Andes, is characterized by its rugged badlands and sparse vegetation, evoking a semi-arid landscape despite receiving an average of 1,300 mm of annual rainfall. The description and dating of fluvial terraces, reveals that this distinctive environment was shaped by a significant drainage reorganization during the Late Pleistocene, dramatically reducing surface water availability, restricting vegetation growth. The transformation was driven by the development of topographic barriers along anticlines and reverse faults.

10:10 - 10:40

Fire as a geomorphological agent in tropical soils, Brazil

***Paulo Angelo Fachin**, Rio de Janeiro State University (UERJ), Brazil*

Fire is a significant geomorphological agent that influences erosion patterns and soil erodibility. In tropical regions, such as rainforests and savannas, the frequency and intensity of burning have increased, highlighting the urgent need for further research on the relationship between fire and soil degradation. This presentation will explore the findings of various studies and discussions on how fire affects different types of tropical soils in Brazil.

10:40 - 11:10

Long-term exhumation and uplift of the Northern Andes using low-temperature thermochronology: Implications for the Cenozoic evolution of the Amazon basin

***Giovanny Nova Rodríguez**, University of São Paulo (USP), Brazil-Colombia*

The Cenozoic Andean orogeny is one of the tectonic events that has had the greatest impact on the evolution of the landscape of South America, especially the Amazon basin. This presentation will show the results of the long-term exhumation and uplift of the southern sector of the northern Andes using tools such as low-temperature thermochronology. In addition, the implications of the establishment of these orographic barriers for the paleographic evolution of the western Amazon basin will be discussed.

11:10 - 11:40

Records of glacial advances in active volcanoes and their possible interpretations: the case of the Nevados de Chillán Volcanic Complex, south-central Chile

***Sofía Navas Chesta**, University of Concepción, Chile*

The Andean Cordillera host a significant number of glaciers. In the south-central region (34°-41°S), most of them are located atop active volcanoes. This area represents a climatic transition zone heavily influenced by the El Niño-Southern Oscillation, the Westerlies, and the Southern Annular Mode. Investigating the influence of volcanic activity on glacier evolution is crucial for accurately interpreting the glacial record and advancing paleoclimatic studies.

11:40 - 12:00

Morphotectonic regions of Costa Rica: a review and updated classification

***Mario Arroyo**, University of Potsdam and GFZ German Research Centre for Geosciences, Alemania-Costa Rica*

The tectonic and geomorphological dynamics of Costa Rica result from the interaction of four tectonic plates in a subduction zone, combined with tropical erosive processes. After the review of an initial subdivision based on tectonic-structural elements and morphotectonic regions, thirteen main morphotectonic units that encompass similar relief and geomorphological characteristics were established. The final classification is related to climatic factors, vegetation, dynamic geomorphology, soils, and land uses, and their potential use as a starting input for environmental planning is highlighted.