

AGU 100 | FALL MEETING

9–13 December 2019 San Francisco, California, USA

Session T13B

New Advances on the Geologic and Tectonic Framework of Colombia and Its Surrounding Regions I

The crustal evolution of Colombia is the result of multiple accretion deformation events that took place from Paleoproterozoic to Holocene, and modern interactions between the South American, Nazca, and Caribbean Plates. The longevity and diversity of its geological record make Colombia and surrounding regions suitable for studying local events and for understanding regional tectonic phenomena. The data acquired over the last 20 years provide an opportunity to rethink our understanding of the geologic and tectonic processes that have shaped the region. Such studies are critical to identify major challenges and explore strategies to address these in the future. This session aims to foster interdisciplinary exchanges and discussions about the geological evolution of Colombia and surrounding regions, but also to provide new research focuses and open opportunities for research collaborations. We welcome contributions at the local and regional scale that span tectonics, stratigraphy, sedimentology, geochronology, petrology, geophysics, paleontology, and related areas.

Chairs: Jorge GÓMEZ TAPIAS, Daniela MATEUS—ZABALA and Rubby Melissa LASSO—MUÑOZ

Session Type: Oral

Date and Time: Monday, 9 December 2019; 1:40 p.m. – 3:40 p.m.

Location: Moscone South; 155, Upper Mezz.

Start time	Lecture title
1:40 p.m.	Tectonic setting in northwestern South America illuminated by a newly relocated earthquake catalog. German A. PRIETO and Daniel MARTÍNEZ.
1:55 p.m.	Construction of the Eastern Cordillera of Colombia: Insights from the sedimentary record. Brian K. HORTON, Mauricio PARRA and Andres MORA.
2:10 p.m.	Cenozoic tectonic evolution the Sierra Nevada de Santa Marta, northern Colombia. Mauricio PARRA, Sebastián ECHEVERRI, Ana María PATIÑO, Edward R. SOBEL, Kerry GALLAGHER and Andres MORA.
2:25 p.m.	The Colombian magmatic record of the Panama arc collision and subduction of the Nazca Plate. Agustin CARDONA, Santiago LEON, Christy B. TILL, Juan Sebastián JARAMILLO and Victor VALENCIA.
2:40 p.m.	Consequences of time-varying subduction geometry beneath Colombia. Lara S. WAGNER, Gaspar MONSALVE, Christy B. TILL, Agustin CARDONA, Brian K. HORTON, Andres MORA, Mauricio PARRA, Thorsten W. BECKER, Claudio FACCENNA and Marlena JONES.
2:55 p.m.	Late Silurian exhumation of the proto-Andean margin as determined from detrital U–Pb geochronology in the Perijá Range, northeastern Colombia. Alejandro PIRAQUIVE, Nicolas VILLAMIZAR, Carolina JIMENEZ, David CONTRERAS–FAYAD, Jimmy Alejandro MUÑOZ–ROCHA and Mary Luz PEÑA–URUENA.
3:10 p.m.	Stratigraphy, sedimentary signatures, and processes associated with the Chicxulub asteroid impact in the Gorgonilla Island K/Pg section. Hermann Dario BERMUDEZ, Vivi VAJDA, Francisco J. VEGA, Jose Antonio ARZ, Ignacio ARENILLAS, Timothy J. BRALOWER, Paul R. RENNE, Jose Vicente RODRÍGUEZ, María Ximena ZORRILA and Vicente GILABERT.
3:25 p.m.	Tectonic inheritance and the uplift of the northern Andes. Andres MORA, Camilo HIGUERA–DIAZ, Mauricio PARRA, Brian K. HORTON and Victor M. CABALLERO.

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Session T21E

New Advances on the Geologic and Tectonic Framework of Colombia and Its Surrounding Regions II

Chairs: Jorge GÓMEZ TAPIAS, Daniela MATEUS—ZABALA and Rubby Melissa LASSO—MUÑOZ

Session Type: Poster

Date and Time: Tuesday, 10 December 2019; 08:00 a.m. - 12:20 p.m.

Location: Moscone South; Poster Hall

Booth	Poster
338	Modeling of mantle flow and dynamic topography in the region of the Sierra Nevada de Santa Marta, Colombia. David QUIROGA , Jilian PEARSE and Claire A. CURRIE.
339	Vertical axes rotations associated with inverted faults in the Eastern Cordillera Colombia, preliminary results. Giovanny JIMENEZ DIAZ , John W. GEISSMAN and Helbert GARCÍA-DELGADO.
340	Assessing the role of crustal components in the geochemical evolution of arc magmatism across eastern Panama and the Colombian Arc. David Edward CAVELL , Alan HASTIE, Sebastian WATT, David BUCHS and Hugo F. MURCIA
341	The recent seismicity of the Eastern Cordillera of Colombia. Albert AGUILAR , German A. PRIETO, Patricia PEDRAZA, Nelson E. PULIDO HERNANDEZ and Gregory C. BEROZA.
342	Repeating earthquakes along the Colombian subduction zone. Juan Carlos BERMUDEZ-BARRIOS and Hiroyuki KUMAGAI.
343	Ongoing crustal deformation and interplate coupling along the Caribbean subduction zone revealed by GPS observations. Sindy Carolina LIZARAZO , Takeshi SAGIYA and Hector MORA-PAEZ
344	Geosciences as a valuable tool in social relationship in Colombia. Rubby Melissa LASSO-MUÑOZ and John CERON.
345	Investigating the northern Andes and southwestern Caribbean: New insights from earthquake relocations using the Colombian National Seismic Network. Brandon BISHOP , Linda M. WARREN, Sungwon CHO, Lillian SOTO-CORDERO, Nick BELECANECH, Patricia PEDRAZA, German A. PRIETO and Viviana DIONICIO.
346	Mapping the geology of South America. Jorge GÓMEZ-TAPIAS , Nohora Emma MONTES-RAMÍREZ and Carlos SCHOBENHAUS.
347	The contribution of the Colombian Geological Survey to the current state of geological knowledge, and the outlook for future geological research in Colombia. Daniela MATEUS-ZABALA and Jorge GÓMEZ-TAPIAS
348	Stratigraphic analysis of the Bahia Intraslope Basin, offshore northern Colombia. Arian Mauricio SARMIENTO , Tomas VILLAMIL and Gustavo SARMIENTO.
349	Detrital geochronology and provenance analyses of Andean molasses as markers of northward tectonic transport. María Daniela MUÑOZ GRANADOS , Robinson O. VILLAMIL, Camilo MONTES, Yamirka ROJAS-AGRAMONTE, German BAYONA and Felipe LAMUS.