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The emergence of residential architecture between the Puna and the Yungas (Northwest Argentina, 25.5°-27.3°S): a radiocarbon approach

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Abstract

The presentation investigates the emergence of residential architecture in Northwest Argentina (25.5°-27.3°S), a pivotal shift in pre-Hispanic habitation practices. Employing a comprehensive radiocarbon dataset (n=172) spanning 1000 BCE to 500 CE, we integrate Bayesian modeling with frequentist methods (Kernel Density Estimates) to refine the chronology of this process across six spatial clusters spanning the Puna highlands to the Yungas lowlands. After filtering for contexts directly associated with residential structures, 108 dates were analyzed. Our results reveal a pronounced diachronic process, challenging traditional models of synchronous change. The earliest evidence for residential architecture emerges in the Puna clusters (Antofagasta de la Sierra, Laguna Blanca) after ca. 200 BCE. In contrast, the emergence in the mesothermal valley and Yungas clusters (El Cajón, Tafi, Yocavil) occurs later, beginning in the early centuries CE. This spatial-temporal pattern indicates a divergence of over 300 years between the earliest and latest clusters, with a regional consolidation of residential life evident around 200-400 CE. The findings demonstrate significant asynchrony in the adoption of residential architecture relative to other "Formative" traits like ceramics and agriculture, which appear centuries earlier. This study refines regional chronologies, underscores the protracted and heterogeneous nature of social change, and provides a robust framework for understanding the complex transition to village life in the south-central Andes.