LEBA CAVE
• Located at Humpata plateau (1800 m a.s.l.) western edge of the Huila highlands in SW Angola
• Multi-component site with a cultural sequence ranging from the Early stone Age to the colonial period;
• Biogenic and anthropogenic features were abundantly known but chronostratigraphic and environmental context are understudied for contexts of southwestern Africa at the border of the tropical forest belt.

RESEARCH GOALS
Reconstruction of the archaeological site through:
• Analysis of bio-anthropogenic features and their taphonomy;
• Application of the geoarchaeological matrix approach for site formation and post-depositional processes;
• Site-scale environmental reconstitution

METHODOLOGY
Field:
• Limited re-excavation of the site in two sectors;
• Assemblage collection and sampling for interdisciplinary analyses;
Laboratory:
• Analysis of cultural artifacts and taphonomic alterations;
• Petrographic microscopy of sediment thin sections combined with elemental and compositional analysis using XRF and FTIR;
• Analysis of stable isotopes from bone and dentine of mammal fauna.

PRELIMINARY RESULTS
Cave formation and stratigraphy
• Topography of the 50m phreatic tube and other karstic structures
• Mapping of chambers exposed by the quarry
• 13 geological strata identified across the site

Bio-Anthopogenic activity
• Guano, dung and coprolites
• Aggregates deposited by carnivores and humans during the Pleistocene and redeposited by geogenic processes;
• Occupational floors by herders, features by forager populations (groups of San) during the Holocene;

Syndepositional and post depositional processes
• Deformation and grain- or debris-flows remobilizing deposits from different chambers related to tectonics and climate;
• Bioturbation and reworking by humans, carnivores and micromammals;
• Decalcification of matrix and coarse particles
• Formation of iron and manganese crusts
• Formation of authigenic minerals from the reaction of guano and bioapatite
• Formation of breccia and phosphatic features in the lower strata

Paleoenvironment and landscape variability
• Seasonal variation of temperature and rainfall using stable isotopes (O, C and N) and impact on pedogenic features
• Comparative data for change in vegetation cover, water and food-availability (replacement of C3 for C4 plants)

SITE FORMATION MODEL