Introduction
American settlements in the Caribbean are identifiable through the assemblage of artifacts; predominantly large concretions of shells, and lesser quantities of ceramics and lithics. Small mounds are distributed between levelled areas where the wooden house structures once stood. Modern ploughing and lootimg have dispersed the material over a large area. The limited evidence of American archaeology asks for novel analysis approaches.

Until recently, the focus in these settlements was on the mounds. Thorough topographic UAS surveys however revealed circular platforms in between earthworks, that may provide crucial information to better understand the living space. Having mapped several sites in high resolution, the outcome provides an overview of size and distribution of mounds and platforms.

Technical Aspects
The flights were conducted in the morning to beat a strong breeze, using a DJI Phantom II quadcopter with attached GoPro Hero 3+ camera, taking one photo per second (about 250-300 per site), generally in 45 degrees angle to cover areas below the canopy. Referencing was done using GCPs measured in by total station. The photogrammetric model was produced using Agisoft Photoscan; the results extracted to and visualised in Arc/3DGIS software.

Landscape
The landscape of Northern Hispaniola shows a great variety of environments, from mangrove forest to arid vegetation to subropical rain forest in the Sierra Septentrional. Ten indigenous archaeological sites in various landscape settings, on hill tops and in the plains close to the sea, were chosen as sample sites based on the visibility of mound/platform combinations and their limited vegetation of which four, with particularly good results are here presented. At all of these sites Chicoel ceramic was found, a style that existed from around 1000AD until the European encounter.

Visualisation
While large trees can be digitally removed from the model (see the site of Pecho Cruz, below), many sites are covered by dense shrub. This is problematic to achieve presentable results. After digitally clearing the vegetation, extracting DEM and orthophoto to GIS, filtering and enhancing of topographic anomalies provide the opportunity to analyse the site further, displaying the actual use and extent of living space, and defining habitation zones.

Site: Laguna Grande, Puerto Plata
Proximity to the sea: 1.6 km
Altitude: 120m
Location: in a flat plan
DEM on hillshade

Site: Rafaelita Rosa, Puerto Plata
Proximity to the sea: 1.2 km
Altitude: 70m
Location: on top of steep hill
Line on hillshade on 3D-DEM

Conclusion
To create livable space on hill tops and in the plains, landscapes were purposely and significantly transformed, showing an important part of American life on Hispaniola. Depending on the existing topography and setting, settlements were arranged accordingly, of which today either remain mounds or platforms or a combination of the two. High resolution topographic measurements provide class or extent, and size of the buildings in the settlement, and further geospatial analysis may reveal information on e.g. intra-settlement connections and hierarchy, and the total amount of earth movement could be calculated.

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