Introduction

Recently, there has been renewed interest in connecting Africans in the diaspora to their ancestral lands. In this context, significant focus has been placed on research which enhances an understanding of the circumstances of enslaved people during the days of enslavement. The archeology of slavery is important to strengthen our understanding of the history and impact of slavery and its aftermath, especially how to locate new sites and relics to enhance their commemoration.

The main goal of this project was therefore to advance the field of geophysics and geoarchaeology and train a new generation of geoscientists by exploring the use of geophysics for archeological investigations related to slavery in the southeastern part of Ghana.

Study Area

The field camp sites covered 4 towns in the southeastern part of Ghana: Afia, Denu, Hedzranawo and Keta.

The sites are in a relatively low lying areas with altitudes varying from about 1m at the coast to 66m inland. The three main geological formations underlying the area are the Dahomian formation, recent deposits of the littoral consisting of marine sands and the Tertiary formation. Average monthly temperature varies between 24°C and 30°C with a mean annual rainfall of 950 mm. The rainfall pattern is multimodal occurring from April to July and from September to October. Vegetation in the area is mostly coastal savannah woodland which characteristically consists of short grassland, with small clusters of bush and trees.

Methodology

The geophysical methods used were magnetic susceptibility, resistivity, magnetic, and Ground Penetrating Radar. The Department of Physics, KNUST provided the equipment: the ABEM Terometer SAS 1000, the Mala GPR system, GSM proton precession gradiometer and the Bartington magnetic susceptibility. The field camp also had lectures in the evenings and data processing as well as interpretation activities.

The methods that were used in the field camp were intended to help in indirectly locating slavery archaeological material, highlighting site stratigraphy of slavery sites and mapping their lateral geometry for further excavation. Data was collected along profiles at the sites of interest. Due to the small nature of the relics of interest, the profiles were taken close to each as much as possible. Each area to be surveyed was divided into grids and GPS readings were used for accurate positioning of profiles. The precise positioning of geophysical sensors is important for subsequent data reduction, processing, interpretation for subsequent pinpointing of anomalies. At the end of each day, data acquired on the day was initially processed for quality control. Outreach activities were also conducted in communities in the study area.

Results

We can observe magnetic anomalies and diffraction hyperbolas that probably correspond to relics related to slavery. The anomalies observed correlated with areas where relics were previously found and agree with oral accounts of slavery activity.

Outcomes

➢ This project has highlighted slavery-related archeological studies using geophysics in the West African region.
➢ Anomalies possibly corresponding to material relics and infrastructure related to the trade in enslaved people in hitherto hidden or marginalized communities in southeastern Ghana have been identified.
➢ 52 students gained practical skills in conducting geophysical investigation such as survey planning, data acquisition, processing and interpretation, presentation of results and scientific writing.
➢ Geophysical outreach was conducted in two Senior High Schools, one basic school and in the communities within the study area.