



MSc. projects at Dept. of Geomatics & Land Mgt

IMMACULATE, ASIIMWE

Analyzing the Impact of Spatial Resolution from different Digital Elevation Models on Hydrologic Models – A Case Study of the Namulonge Wetland (Uganda)

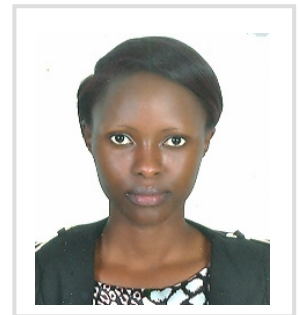
Keywords: WETLANDS, DEM/ DTM, SRTM, ASTER, SPATIAL RESOLUTION

In this MSc. study, wetland hydrologic modeling will be carried out using ASTER DEM, SRTM DEM and a high resolution DEM followed by a comparative assessment of the resultant hydrologic models.

Wetlands are complex ecosystems that occur in a wide variety of environments, often under differing climatic and topographical conditions. Researchers acknowledge that knowledge of wetland hydrology is a prerequisite to understanding wetland environments and determining their vulnerability to change. DEMs are key inputs into hydrologic modeling due to their strong influence on surface run off and ground water dynamics.

Global Digital Elevation Models (GDEMs) have gained popularity for current research and several application areas e.g. hydrologic modeling due to their near global coverage as well as free accessibility. It is important to note that the spatial resolution of the DEMs affects the quality of the hydrologic models. However sufficient research has not been conducted to evaluate the impact of DEM resolution on the accuracy of hydrologic models.

In this study, we shall input the widely used GDEMs i.e. Shuttle Radar Topography Mission (SRTM) and Advanced Space borne Thermal Emission and Reflection Radiometer (ASTER) to produce hydrologic models for the study area. A more accurate DEM generated by ground survey using Geodetic GNSS will also be input to produce a hydrologic model. A comparative assessment of the resultant hydrologic models from the 3 different DEMs will be carried out to evaluate the impact of DEM spatial resolution on hydrologic models.



Contact data:
 Immaculate Asiimwe
 Dept. Geomatics & Land Mgt.
 College of Eng. Design Art & Technology
 Makerere University
 P.O. Box 7062
 Kampala, Uganda.
 asiimwe9@gmail.com



Work Package	High Resolution Digital Elevation Model (DEM)
Countries of work	Uganda
1 st Supervisor	Dr. Moses Musinguzi
2 nd Supervisor	Prof. Dr. Gunter Menz
Subject	Geomatics
Faculty	College of Engineering Design Art and Technology
University	Makerere University Kampala
Working period	Sep 2014 – May 2015