



**Ben-Gurion University of the Negev
Blaustein Institutes for Desert Research**

The Swiss Institute for Dryland Environmental and Energy Research
Alexandre Yersin Department of Solar Energy and Environmental Physics

Using a single band Nano Satellite for Earth Observations (EO): Lessons learnt from BGUSAT

Dr. Shimrit Maman
Geography department
BGU

Abstract:

EO missions using nano-satellites have been successfully launched and used in the past years. Forecasts for the upcoming years display an increase of such missions. BGUSAT is a remote sensing single band, SWIR sensor via a spatial resolution of 600 meters per pixel.

BGUSAT was launched as a secondary payload from India on the PSLV-37 on February 2017 as part of collaboration between the Israeli Aerospace Industries (MBT), Ben-Gurion University of the Negev and the Israeli Space Agency. As opposed to established and well known satellites and their EO sensors, the properties and the feasibility to conduct a scientific research using BGUSAT was yet unknown and was thus addressed in this research. Such a sensor upraises the question of tradeoff between spatial resolution and spectral coverage according to the scientific usage. Thus, the overall objective was to provide a study using a low spatial resolution imaging system at a wave length of approximately 1600 nm that might give way to mapping atmospheric and LULC phenomena's. A comparison of BGUSAT images with other well established and known earth observation satellites were used to investigate the potential contribution of a single band images.

In the presentation, we intend to overview the satellite design and capabilities and present results of the ongoing research. A primary conclusion that we set to demonstrate is that in comparison to large known and widespread operational satellites, cubesats can achieve equivalent and improved results with the advantage of high temporal resolution and beneficial spatial resolution of LEOe.

Date & Location:

Tuesday, June 2, 2020, 11:00

Lecture room, Physics Building (ground floor)