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DISCOVERING PATTERNS OF CHANGE IN DESERT-FRINGE ECOSYSTEMS

**Abstract**

Desert-fringe ecosystems are the most vulnerable regions of Earth where climate change and human activities may yield a positive feedback into desertification processes. Satellite based remote sensing since the early 1980s provide means of discovering patterns of change. Mapping Life-form compositions (trees, shrubs, dwarf-shrubs and grasses), their spatial patterns, the formation of threshold zones and changes in their productivity are instrumental for monitoring desertification processes and or understanding their mechanisms. In my presentation I will review methods develop for studying desert-fringe ecosystems change in the South-Eastern Mediterranean. These methods include spectral methods in the VIS/NIR spectral region, utilization of radar backscattering and polarization data, phenological techniques and spatial/morphological techniques. Implementation of these methods on the climatic gradient between the Judean Mountains and the Negev Desert had revealed new information regarding the ecology of this transition zone and its change due to climate change.