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Thesis Title	Development of a methodology for estimating the variation of land surface temperature for urban and non-urban spatial units for the period 1995-2015 in the region of Greece.
Supervisor	C. Cartalis, Professor
Summary	<p>Land surface temperature (LST) is a significant climatic parameter for identifying micro-climatic changes in urban and non urban environment. LST is mainly influenced by the characteristics of land surface such as land use and land cover.</p> <p>In this study, the used data are acquired by the Advanced Very High Resolution Radiometer (AVHRR) of the satellites NOAA 11, 14, 16, 18 and 19 during July for the period from 1995 to 2015. Initially the images were radiometrically and geometrically corrected in order to estimate the brightness temperature for each satellite. For the assignment of the surface emissivity land use maps of Corine Land Cover were used. Split window algorithm was applied to the data so as to calculate the land surface temperature in a spatial resolution of 1km x 1km. Based on land use maps of Corine Land Cover, urban and non urban spatial units were chosen (Athens Center, Airport Eleftherios Venizelos, Industrial Area of Western Attica, Lamia, Pindos, Parnitha, plain of Thessaly).</p> <p>The areas of interest displayed on the whole a positive trend. Areas with land use changes appeared greater growing positive trends in relation to areas without changes in land use. Areas with dense urban fabric, road network and intense human activity showed growing trends and rising in LST through the years.</p>
Key words	Land surface temperature (LST), NOAA data, AVHRR, land use, trends
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