[EE] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-TT Technology & Techniques

[M-TT36]Environmental Remote Sensing

convener:Wei Yang(Chiba University), Yuji Sakuno(Institute of Engineering, Hiroshima University), Akihiko Kondoh(千葉大学環境リモートセンシング研究センター)

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Our human beings are encountering various environmental issues on the Earth, and it is urgent to find out the solutions. Remote sensing is currently the only feasible means to observe the Earth environment at regional/continental /global scales over long periods, and consequently detects the environmental changes occurred all over the world. This session invites presentations on theory, science, technology, and applications of remote sensing to study the Earth environment from regional to global scales. Both oral and poster presentations are sincerely welcome.

[MTT36-P02]TOFs Role in Carbon balance and their relation with LST and Vegetation Indices: A Remote Sensing Approach

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Keywords:Tree Outside Forest (TOFs), Land Surface Temperature(LST), Vegetation Indices(VIs), NDVI, EVI, Carbon Sequestration

Life can be said to be dominated by the carbon cycle .Reducing energy demands plants act as both reservoirs and potential sources of carbon. The destruction and degradation of trees contributes to the climate change through the release of CO_2, but the planting of new trees can help mitigate against climate change by removing CO_2 from the atmosphere. In the absence of major disturbances a newly planted patch of trees which is called as Tree Outside Forests, continue to absorb carbon for 20-50 years or more. Plantations grow relatively fast, thus absorbing CO_2 at higher rates than natural forests . Carbon stock assessment is one of the important step for sustainable land use planning in relation to low carbon emission. Rise in CO_2 concentration in atmosphere affects temperature leads to disturbance in the normal growth and development of tree species. Using Satellite data current study attempts to assess how TOFs contribute for maintaing carbon balance in atmosphere, their role in maintaing the Land Surface Temperature (LST) of a particular area and its relation with Vegetation Indices (VIs) like (NDVI,EVI etc.).Attempt has been made to measure tree height and crown area and to estimate carbon stock using high resolution satellite data. TOFs grow on a variety of landscape eg. Linear scattered, block etc. called as stratum. Study has been conducted on two areas one having variety of stratums and another with less number of stratums. Finding of study depicts the picture about carbon stock for areas having variety of stratums and its relation with VIs and LST compared with areas having less variety of stratums. As trees and vegetation lower surface temperature through evapotranspiration, study also focused on influence of TOFs on microclimatic parameters like Evapotranspiration, Leaf area Index, PAR,fPar and vice versa on both type of study areas.