

عنوان مقاله:

Investigating the relationship between NDVI and EVI vegetation indices with ground surface temperature in Tehran

محل انتشار:

مجله پژوهشگران مهندسی عمران, دوره 5, شماره 2 (سال: 1402)

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خلاصه مقاله:

Cities became one of the main centers for conducting research due to the fact that they are the main places where people gather. One of the problems that plague the city today, especially the big cities, is the phenomenon of the city's heat island. Many things play a role in the spatial changes of the heat island, among them are human activities and changes in the earth's surface cover, which often lead to the reduction of green space. Several vegetation indices have been developed, and in this research, NDVI and EVI indices were investigated. Earth's surface temperature for Mordad ۲۷, ۱۴۰۰ was retrieved from Landsat images using a single-channel algorithm and the mentioned indices were extracted for the above date. The results showed that most of the city surface was covered by a temperature layer of ۳۰۵-۳۱۰ degrees Kelvin. By comparing the indices and the temperature of the earth's surface, it was found that the temperature of the earth's surface and vegetation have an opposite relationship so that in the south and east the temperature is lower and the vegetation is more; But this issue is the opposite for the south and west. Also, the relationship between the surface temperature of the earth and the EVI index was equal to -۳۱.۲۳%, and its relationship with the NDVI index was about -۲۴%; This shows that these two indicators are similar with a slight difference. Cities became one of the main centers for conducting research due to the fact that they are the main places where people gather. One of the problems that plague the city today, especially the big cities, is the phenomenon of the city's heat island. Many things play a role in the spatial changes of the heat island, among them are human activities and changes in the earth's surface cover, which often lead to the reduction of green space. Several vegetation indices have been developed, and in this research, NDVI and EVI indices were investigated. Earth's surface temperature for Mordad ۲۷, ۱۴۰۰ was retrieved from Landsat images using a single-channel algorithm and the mentioned indices were extracted for the above date. The results showed that most of the city surface was covered by a temperature layer of ۳۰۵-۳۱۰ degrees Kelvin. By comparing the indices and the temperature of the earth's surface, it was found that the temperature of the earth's surface and vegetation have an opposite relationship so that in the south and east the temperature is lower and the vegetation is more; But this issue is the opposite for the south and west. Also, the ... relationship between the surface temperature of the earth a

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