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Application of GIS in solar radiation mapping for Malaysia

Abstract

Increasing need for energy resources in addition to the increase in pollution rate caused by usage of conventional energy resources has created new alternative in acquiring energy resources. Even though there are many solar instruments that can be used in measuring solar radiation intensity, the high cost has limited its usage to rich countries. As an alternative, a cheaper method in measuring solar intensity includes use of satellite images. In this study, satellite images are used and compared with the actual readings from solar instruments. The result is then used to estimate solar intensity for other places where solar instrument is not available and finally a map that shows the solar radiation for Peninsular Malaysia is developed by using GIS application.

Keywords; Renewable energy; Satellite images; Solar energy; Solar radiation mapping; Solar radiation modeling