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## The model for estimating diffuse fraction of global solar erythemal ultraviolet radiation in Thailand

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The surface solar erythemal ultraviolet (EUV) radiation which affects human skin consists of direct and diffuse components. The sum of both components is called global EUV radiation. As Thailand is located in the tropics with a lot of cloudy days and clouds effectively create diffuse EUV, information on diffuse EUV is very important for protecting human skin from harmful effects of EUV. Due to the lack of the routine measurements of diffuse EUV, a model for estimating EUV diffuse fraction of global EUV daily dose was developed in this work. In developing the model, diffuse EUV and global EUV was simultaneously measured at two solar radiation monitoring stations in Thailand, namely Ubon Ratchathani (15.25°N, 104.87°E) and Nakhon Pathom (13.82°N, 100.04°E). A three-year period (April, 2011-March, 2014) of EUV data from these stations was used for formulating the model. This model expresses the EUV diffuse fraction as an empirical function of EUV clearness index ( $k_{t,EUV}$ ) and aerosol optical depth ( $AOD_{340}$ ). To investigate its performance, the model was used to calculate diffuse EUV daily dose at these stations for the period: April, 2014-March, 2015. It was found that diffuse EUV calculated from the model and that obtained from the measurement are in good agreement, with the root mean square difference of 8.2%.

### Biography

Pranomkorn Choosri is currently pursuing her PhD from the Department of Physics, Faculty of Science, Silpakorn University in Thailand, supervised by Associate Professor Dr. Serm Janjai. Her study is focused on the estimation of diffuse solar radiation in different wavelength bands using satellite data.

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