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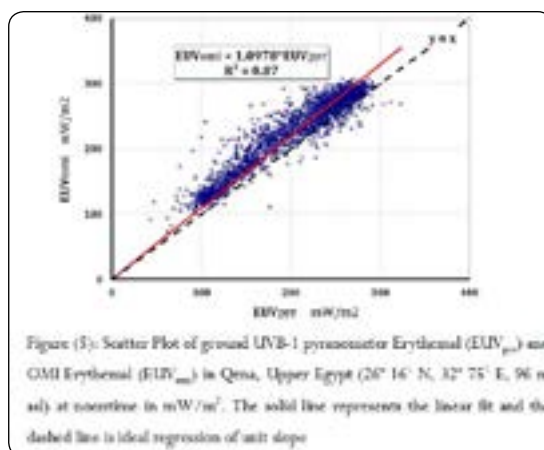
# Satellite & Space Missions

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## Erythemal UV dose rate spatial distribution using ozone monitoring instrument satellite data over Egypt

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The spatial distribution of Erythemal Ultraviolet Dose Rate (EUV) at noon in mW/m<sup>2</sup> observations derived from the Ozone Monitoring Instrument (OMI) are presented over Egypt covering the geographical domain (22.5°–31.5°N, 25.5°–35.5°E) during twelve year from 2005 to 2015. In the frame of the variability, Egypt was considered as an average area (one pixel); the box-whisker plots were created for average monthly and annual values of EUV. The monthly mean of EUV values are lower in the winter months (December to February)  $116.17 \pm 2.30$  mW/m<sup>2</sup> compared to those in the summer months (June to August)  $282.36 \pm 2.87$  mW/m<sup>2</sup>. The annual mean of EUV values are lower in 2015 ( $204.15 \pm 60.41$  mW/m<sup>2</sup>) and higher in 2013 ( $213.13 \pm 60.34$  mW/m<sup>2</sup>). For the purpose of mapping contour, with a spatial resolution of  $1^\circ \times 1^\circ$ , 104 pixels, the results illustrated by monthly, seasonally and all period contour maps indicate high similarity of EUV in all years. Finally comparisons of ground-based measurement of Erythemal Ultraviolet Dose Rate (EUV<sub>pyr</sub>) using a UVB-1 pyranometer with Ultraviolet Dose Rate (EUV<sub>omi</sub>) from OMI satellite data have been examined in Qena, Upper Egypt (26° 16' N, 32° 75' E, 96 m asl) at noontime in mW/m<sup>2</sup>. The examination revealed an overestimation of EUV<sub>omi</sub>, on deviation average by  $13.37 \pm 11\%$ , within the period of study from 2006 to 2015 (except 2011-2012).



### Recent Publications

1. S M El Shazly, A A Hassan, Kh O Kassem, Emad A A and Eman F El nobi (2011) Erythemal dose in Qena, upper Egypt based on solar UV-B measurements from UVB-1 pyranometer and its deviation from EP/TOMS satellite. Journal of South Valley University for Environmental Researches (JSVUER) 1(1):45-49.
2. S M El Shazly, Kh O Kassem, A A Hassan, Eman F EL-Nobi (2012) An empirical model to estimate UV index in some upper Egypt regions. Resources and Environment 2(5):216-227.
3. M El-Nouby Adam and Eman F El-Nobi (2017) Correlation between air temperature and atmospheric turbidity at a subtropical location. World Environment 7(1):1-9.

### Biography

Eman Fouad El-Nobi is a Lecturer in Physics Department, Faculty of Science, South Valley University-Qena-Egypt, and has her expertise in Solar Radiation especially on Ultraviolet Radiation. She completed PhD in Atmospheric Physics at Faculty of Science, South Valley University, and her thesis is entitled as "Distribution of UV-index in some upper Egypt regions".

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