



## **Daily solar flare index analysis and its periodicities during the last three cycles**

**A. Hady**

Department of Astronomy and Meteorology, Faculty of science, Cairo university

There are many effects of the solar phenomena on the space weather and earth's atmosphere. Solar flare is the high energetic phenomenon in the solar atmosphere. In the present work, a Fourier transformation analysis has been applied on time series for solar flares index of the last three solar cycles (21, 22 and 23). The used data of solar flares are the northern hemisphere flares, southern hemisphere flares and the daily solar flares on the total solar disk. The used data were obtained from solar-geophysical data of NOAA, Colorado, and USA. There are short and long term periodicities were appeared. According to the data analysis, the 152 day periodicity was appeared and significant again during solar cycle 23. This periodicity was absent during solar cycles 20, 21, and 22. The analysis led to interested results for long-term periodicity and its relation to the theoretical mode of solar activity and core oscillations.