

PROGRAMME FOR THE SUN-EARTH ANGLES DETERMINATION

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Keywords: Solar Elevation, Azimuth Angle, Air Mass, Optical Air Depth

The paper presents a soft-ware developed for the calculus of the angles that describes the apparent movement of the sun on the sky. The programme allows the interactive selection of the site and the period for what the user desires the calculation of the declination, solar elevation and azimuth angles. The programme also allows the graphical display both of the variation during the equinoxes and solstices for the solar elevation and azimuth angles and of the sunchart diagrams.

The computer programme designed takes into consideration the following objectives [1]:

- ✓ the use of a performable soft;
- ✓ the programme must have a great generality;
- ✓ the programme structure must allow later on developments;
- ✓ the achievement of the solar angles modelling for more sites from Romania;
- ✓ the programme allows both the numerical display (tabular data presentation) and graphic display;
- ✓ there are calculated the solar angles, the air mass, the optical depth and the sun chart for selected site from default list or for the site desired and entered using the latitude of this.

The user programme interface

With proper knowledge, both professional and amateur solar systems designers can use the sunchart to efficiently and easily design and positional optimize solar collectors, solar electrical panels, passive solar homes, greenhouses, and other solar devices.

REFERENCES

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- [2] L'opez, G., Battles, F. J. Estimate of the atmospheric turbidity from three radiation algorithms. A comparative study. *Annales Geophysicae* p.2657-2668.