Laboratory for Wind Turbine Testing
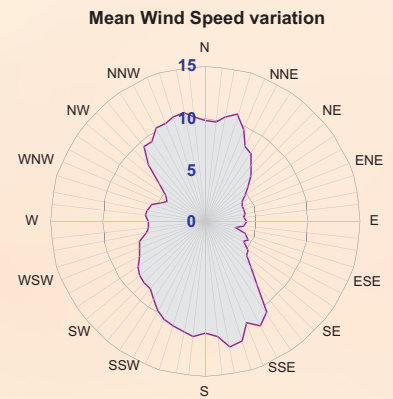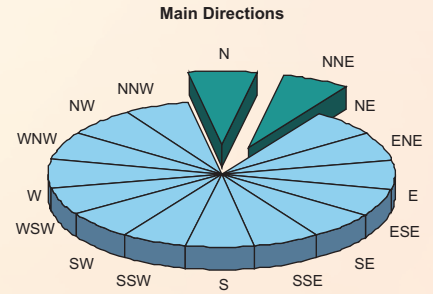e-mail: infowind@cres.gr
liaison@cres.gr

WINDROSE software - Analysis & Correlation of Wind Data

- A Microsoft Excel Add-In for wind data analysis and correlation

- Performs complete statistical analysis complying with the IEC requirements including Weibull distribution constants (per direction sector, per height and global), turbulence intensity evaluation and polar plots (wind roses) of the time and energy distribution of the wind.

- Correlates data from two sites and provides predicted time-series, based on the detailed correlation (per wind speed and direction ranges) of the common period data of the two sites (MCP method).

- Includes wind shear estimation

- Calculates the expected energy production of a wind turbine, taking into account the air-density correction.

- Produces monthly charts and tables with the per hour variation of the wind speed, the wind direction, the expected wind turbine's power, the temperature and the solar radiation.

- A full feature version (limited to analysis of 1-month data) can be downloaded from **www.cres.gr/windrose**

Main Directions

Mean Wind Speed variation

Correlation of wind speeds
Direction Sector: **NW**

$y = 0.7075x$
$R^2 = 0.99$

Wind Speed of Site-4 [m/s]

Wind Speed of **Reference** Site [m/s]

Mean wind speed variation with Height

6.7 m/s
6.6 m/s
6.4 m/s
6.2 m/s
5.7 m/s

Height [m]

Wind Speed [m/s]

October, 2005 Mean Wind Speed: 9.2m/s Data completeness:100.0%

Wind Speed [m/s]

Day

Time Distribution

>15m/s
10-15m/s
5-10m/s
2-5m/s

N NNW NW WNW W WSW SW SSW S SSE SE ESE E ENE NE NNE