# The frequency distribution of snowfall

K. Cindric (1) and J. Juras (2)

(1) Croatian Meteorological and Hydrological Service, Zagreb, Croatia (cindric@cirus.dhz.hr), (2) Geophysical Department, Faculty of Science, Zagreb, Croatia (juras@irb.hr)

In the climatological reports the main attention has been paid to snow cower due its importance in agriculture and hydrology. Less attention has been given to the examination and presentation of snowfall data which are of great importance due to adverse impact of snow on transport among other things. Data of daily, monthly and seasonal snowfall depth can be described with adopted frequency distribution. The most commonly are: lognormal, gamma or Weibull distribution. In this study the characteristics of snowfall distribution for various time scales with truncated square-root-normal distribution are described. The advantage of this distribution is that it is defined with only two parameters which can be determined from mean and standard deviation of all data – including zero values.

On the examples of data for the period of 60 years for several stations in Croatia, distribution of daily, monthly and seasonal snowfall amounts are demonstrated. Daily values of empirical relative frequencies of days with measurable snowfall show a marked maximum of about 35% in midwinter. However the probability for large snowfall depth, say >30 cm, is approximately constant in a broad time interval from November to March and varies around 1%