



## **Measurement of solid precipitation with an optical disdrometer**

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A study about measurements of solid precipitation using an optical disdrometer is presented. The optical disdrometer is an improved version of the ODM 470 disdrometer. It allows to measure hydrometeors within a size range of 0.4 to 22 mm in diameter. The main advantage of this optical disdrometer is the possibility of measurements under high wind speeds. To measure solid precipitation a model was developed to determine the mean cross-sectional area of snow-crystals of different predefined shapes at a high number of different random orientations. An algorithm based on a relationship of maximum diameter to diameter of the mean cross-sectional area of a crystal together with the size dependent water contents and falling velocities for every simulated crystal was developed. The new algorithm was applied to the data set of a measurement campaign from winter 1999/2000 in Uppsala/Sweden and was compared to the data set of a Geonor gauge. The performance of the disdrometer in terms of synoptical conditions will be discussed.