

A NEW KIND OF PORTABLE ENVIRONMENTAL MONITORING METHOD**H.J. Grimm¹, T.H. Petry¹, T.H. Kuelz², M. Richter²**¹*GRIMM Aerosol Technik GmbH & Co. KG, Ainring, Germany*²*GIP Messinstrumente, Pouch, Germany*

Particulate Matter (PM) values only give a certain amount of information about particles in ambient air. For a better assessment of the possible impact on human health, there is a need for more information. It is necessary to determine the aerosol size distribution in combination/addition with different speciation technologies. Optical particle counter (particle counting with the method of orthogonal light scattering) are widely used to measure particle counts and mass of ambient aerosols. For this new approach an OPC (optical particle counter), a Grimm dust monitor #107/#165, has been used to determinate the particle mass distribution and the different PM values. This instrument incorporates a special sample probe drying system and does not alter the probe. In the sample air stream outlet of the OPC, behind the measuring chamber, a new kind of PAH (polycyclic aromatic hydrocarbon) sensor and HC (hydrocarbon) sensor for continuous monitoring has been incorporated. The results are the amount of particle bound PAH and HC in the same sample air, which has been monitored for the particle mass distribution. In addition there is a heater included in the sample pipe, which can be powered to heat up the sample air until most VOC (volatile organic components) have vaporised. It is possible to switch between heated and unheated mode. By doing so the VOC fraction in the ambient air can be determined as well. The whole system configuration is made for the mobile use. This allows for mobile measuring campaigns, hotspot measuring or source apportionment.