

Source Identification Measurements of UFP Immission Next to an Italian Harbor

Volker Ziegler¹; Henrik Hof¹; Michele Gianelli²; Dr. Stefan Hoge Kamp¹

²Labservice Analytica srl

¹Palas GmbH

Presentation by Volker Ziegler or Henrik Hof

Ultrafine particle studies are conducted for more than 50 years already and gained more and more attention in the last decades due to growing concerns about their health relevance and environmental impact. Numerous studies have been conducted across various fields, including atmospheric science, environmental health but as well on synthetic nanoparticles. The measurement of particle number concentrations and their size distribution with condensation particle counters and mobility particle size spectrometers are established since many decades. Alternative and cheaper technologies are developed and about to continuously verified. The upcoming European Air Quality Directive makes UFP measurements mandatory even though no limits are existing. Beside the proven nano technology with MPSS or CPC, the diffusion charge based method will be a pricewise cheaper method to determine hot spots and gradients.

Together with Labservice Analytics srl and their customer GRIMALDILINES (a Ferry operator), a campaign was started in Brindisi to determine the concentrations and mean diameters where regularly vessels enter and leave the port. For this campaign a new device AQ Guard Smart 2000, based on the technology of diffusion charging was used. The setup, results and some interesting conclusion will be presented.