Consortium

"Open Consortium" for conducting a UFP exposure study (OC UFP exposure)

Eleven renowned research institutions and other specialist organisations have joined forces to form a consortium to perform the UFP exposure study.

Leibniz Institute for Tropospheric Research, Leipzig (TROPOS)

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TROPOS is active worldwide in the field of air quality measurement, undertaking chemical and physical characterisations of aerosol particles and their sources, and data quality assurance. In addition to this UFP exposure study, TROPOS works with the German Environment Agency (UBA) to coordinate the German Ultrafine Aerosol Network (GUAN).

Air Consulting Hellebrandt (ACH)

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Since 2000, ACH has been modelling emissions at Frankfurt Airport and other airports which originate from sources other than the aircraft themselves. ACH's activities have included working on a German Environment Agency project researching the concentrations of ultrafine particles around major airports such as the one at Frankfurt am Main.

German Aerospace Center, Stuttgart and Oberpfaffenhofen (DLR-VT, DLR-IPA)

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For many years the DLR's Institute of Atmospheric Physics (IPA) and Institute of Combustion Technology (VT) have been investigating the impacts of aviation on the climate and the environment. The work focuses mainly on collecting emission data both on the ground and in the air, and on using them in suitable models for estimating their impacts.

Institute of Environmental Engineering, ETH Zurich

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The ETH Zurich has a huge amount of experience in developing particle emission inventories for civil aviation, in particular using high-resolution aircraft flight paths, which results in a more sophisticated estimation of the particle concentrations close to airports.

Helmholtz-Zentrum Hereon, Geestacht (HEREON)

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The research scientists in the Chemistry Transport Modelling department at HEREON have many years of experience in analysing and identifying atmospheric processes in three-dimensional models, developing chemistry transport models, and in modelling air quality in order to assess the consequences for health. In the study, HEREON is the emission modelling and the interface for

emission modelling, and implements the necessary further developments of the dispersion model used for ultrafine particles.

Institute for Atmospheric and Environmental Sciences, Goethe University Frankfurt am Main (IAU-GUF)

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The IAU at Goethe University in Frankfurt am Main is specialised in the chemical characterisation of ultrafine particles using high-resolution mass spectrometry and liquid chromatography. By identifying "marker substances" (fingerprints), researchers can attribute particles to specific sources, e.g. aircraft emissions.

Institute for Environment and Energy, Technology and Analytics, Duisburg (IUTA)

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For many years, the IUTA has been performing physical characterisations of ultrafine airborne particles. It has a special focus on developments in measurement technology and the interpretation of measurement data.

IVU Umwelt, Freiburg (IVU)

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The company IVU Umwelt has many years of experience in modelling motor-vehicle-related emissions and in compiling and preparing emission data for chemistry transport modelling, particularly for the German state of Hesse. In the study, IVU Umwelt provides the non-airport-related emission data for the chemistry transport modelling.

The Dutch Organisation for Applied Scientific Research, Utrecht (TNO)

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TNO has many years of experience with emission cadastres, and its role in the study is to make results from ongoing EU research projects on UFP emissions available. They provide the basis for calculating the emission values used to model the ambient UFP concentrations.

Technische Universität Braunschweig, Brunswick (TUBS)

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The Institute of Flight Guidance at the TU Braunschweig uses various unmanned aerial systems to investigate the vertical distribution of ultrafine particles and the connection with the properties of the atmosphere. It flew drones at the Berlin Brandenburg Airport as early as October 2021 to investigate particulates for the German Environment Agency.

Technical University of Darmstadt, Darmstadt (TUD)

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The TU Darmstadt has many years of experience in applying electron microscopy to characterise atmospheric aerosol particles, which allows the particles to be attributed to specific sources. In

addition, the TU Darmstadt is active in the field of exposure characterisation, e.g. in the investigation of black carbon and nanoparticles from a variety of anthropogenic sources.

Lohmeyer GmbH

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Lohmeyer GmbH is an economically and technically independent company dedicated to the key areas of air pollution control, climate, aerodynamics, and environmental software. Lohmeyer GmbH has many years of experience in modeling emissions of various categories, particularly vehicle-related emissions. Among other projects, it has coordinated the Federal Environment Agency's research project on ultrafine particle concentrations in the vicinity of major airports, using Frankfurt Main as an example, and prepared emissions data outside the airport grounds for the chemical transport model.