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Prof. Hartmut Herrmann is a Professor of Atmospheric Chemistry at the University of Leipzig and Head of the Atmospheric Chemistry Department (ACD) at the Leibniz Institute for Tropospheric Research (TROPOS) in Leipzig. He is a distinguished visiting Professor at the School of Environmental Science and Engineering of Shandong University at Qingdao and a Concurrent Professor in Environmental Science and Engineering at Fudan University. His research intends to understand the tropospheric multiphase system up to the level of its predictability. Model development is strongly based on experimental work both in the laboratory and in the field. Lab work utilizes state-of-the-art physical and analytical chemistry methods to study gas phase, aqueous phase, organic phase, surface and multiphase phenomena. Field work uses advanced techniques to understand chemical processing and composition of tropospheric particles, clouds and rain in the complex interplay of all the compartments involved.

Prof. Herrmann has published 282 peer-reviewed articles and 14 book chapters and has been involved in 101 third-party funded research projects supported by the EU as well as German research entities such as DFG and BMBF, among others.

Abstract title

Atmospheric multiphase chemistry: What could be important in China ?

Recent subjects of study in tropospheric multiphase chemistry will be discussed with emphasis on the following points: (i) Gas phase chemical processing leading to particle constituents (ii) Aqueous chemistry as an aqSOA source - Lab, field and modelling work (iii) biomass burning investigations and (iv) what of this can actually be relevant for air quality and atmospheric chemistry research in China ?

For the first point, apparently there is a strong revival of gas phase chemistry producing low volatility, highly water soluble compound in homogeneous gas phase processes. While there is a lot of new information for individual gas phase processes, especially the particle chemistry of the reaction products formed urgently needs to be further explored. For the second point, aqueous phase chemistry apparently can significantly contribute to the observed budgets of inorganic and organic particle constituents. It will be discussed what research is going on for organics chemistry and what is being investigated for inorganic particle composition. The concentration levels of particle phase constituents will be discussed. The HCCT experiment conclusion will be shown. Third, recent results on biomass burning will be presented. Finally, implications for China will be discussed and some suggestions for collaborative approaches to tackle multiphase chemistry in China will be made.