ACINN Graduate Seminar, Innsbruck University
Location: Seminar Room on the 8th Floor of Bruno-Sander-Haus (60819SR)
Wednesday, 29 May 2019, 11:45

Highly oxygenated organic molecules (HOM) and its Atmospheric Relevance

Lukas Pichelstorfer

University of Helsinki

Large amounts of volatile organic compounds (VOCs) are constantly emitted to the atmosphere from various natural as well as anthropogenic sources. Recently it has been shown that autoxidation, most likely involving intramolecular H abstraction by peroxy radicals, can quickly transform VOCs to highly oxygenated organic compounds (HOM) after initial oxidation. Some of the molecules produced this way feature low to extremely low vapor pressures or high reactivities and will therefore affect cloud condensation nuclei (CCN) activation and, potentially, new particle formation. Describing and quantifying their contribution is extremely challenging. Main reason for this is the huge number of reaction products resulting even from the oxidation of a single VOC species. The reaction products typically contain many isomers which cannot be distinguished by mass spectrometric means. As a result, their properties remain unclear.

In this talk, main difficulties regarding the understanding of HOM chemistry will be discussed. Further, a possible way to overcome the latter will be outlined.