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## Production and distribution of freshwater trace gases

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By Bettina Hodapp

AV Akademikerverlag Nov 2014, 2014. Taschenbuch. Book Condition: Neu. 220x150x4 mm. This item is printed on demand - Print on Demand Neuware - Trace gases are important because of their atmospheric impacts, potential cooling capacity on the climate and the ecophysiological benefits they have on emitting organisms. Trace gases have been widely studied in terrestrial and marine ecosystems; however, few studies have been done in freshwater. This study quantifies, for the first time, the concentrations of the biogenic non-methane volatile organic compounds (VOCs) isoprene, ethene and dimethyl sulfide (DMS) in Lake Constance. It further explores their production in laboratory cultures of freshwater algae. The results suggest that Lake Constance is a source of isoprene as well as DMS, but ethene does not play an important role for the gas exchange between freshwater systems and the atmosphere. Freshwater algae seem to have very similar isoprene production patterns to marine algae. DMS production seems to be rather species-specific and there is strong reason to assume that DMS production stems mostly from bacterial breakdown of organic material and not from DMSP. This is the first time isoprene was measured in a large freshwater lake and provides an important step towards assessing the role...



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