



Methyl chloride emission from a fern growing in sub-tropical, temperate and cool-temperate climates

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Methyl chloride (CH_3Cl) is the most abundant halocarbon in the troposphere, and is known as a natural stratospheric ozone depletion compound. Amongst its various sources, tropical forests are likely the largest contributor, followed by biomass burning, oceans and salt marshes. There have been unsolved questions why CH_3Cl -emitting plants are dominated by tropical plants. Recently we found that a fern, *Osmunda japonica*, collected from temperate zone emits as high as several $\mu\text{g}\cdot\text{g}(\text{dw})^{-1}\cdot\text{h}^{-1}$ of CH_3Cl . This fern has a wide natural distribution, covering sub-tropical, temperate and cool-temperate climate, making it possible to study the CH_3Cl emission rate from one species under different climate conditions. In this presentation, we report seasonal and spatial variation of the CH_3Cl emission rate from *O. japonica*, and discuss its controlling factors.