



## **A Novel Concept to Improve Measurement Accuracy of Rice Paddy Methane Emission: Automated Calibration on a Regular Basis**

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Rice cultivation is one of the largest sources of methane emission into the atmosphere. The conventional approach to rice paddy monitoring of methane in Korea is to use manual or automated flux chamber methods to capture methane originated from both rice plants and paddy. To date, the most advanced methane monitoring systems are based on sequential or parallel runs that consist of automated capture of air samples, automated transfer to a gas chromatograph, and subsequently automated analysis of methane. However, regular monitoring of methane in a rice paddy have not fully raised quality issues with regard to a combined system of automated air sampling, transfer and gas analysis. Scientific issues need to be addressed with a special focus on calibration practice of methane within the current practice. An innovative approach will be presented with a novel concept of calibration of the integrated system including both the automated flux chamber and a gas chromatograph. A new approach would enhance reliability of quality of methane emission monitoring data from a rice paddy.