



## **Influences of wind on the uptake of XAD passive air sampler in the Tibetan Plateau**

Ping Gong (1), Xiaoping Wang (2), and Xiande Liu (3)

(1) Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing 100101, China; CAS Center for Excellence in Tibetan Plateau Earth Sciences, Beijing 100101, China (gongping@itpcas.ac.cn), (2) Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing 100101, China; CAS Center for Excellence in Tibetan Plateau Earth Sciences, Beijing 100101, China (wangxp@itpcas.ac.cn), (3) Chinese Research Academy of Environmental Sciences, Beijing 100012, China (liuxdxd@hotmail.com)

The passive air sampler based on XAD-2 resin (XAD-PAS) is a useful tool for studying the long-range atmospheric transport of persistent organic pollutants (POPs) in the remote or high-altitude regions. Due to its opening bottom, the sampling processes of XAD-PAS was influenced by wind or air turbulence. By now, there were no studies focusing on the wind impact on the sampling rates (R values) in field. In this study, three sampling sites in the Tibetan Plateau, a high-altitude region with large range of wind speed ( $v$ ), were chosen to calibrate XAD-PAS. In the low-wind regions, the R values fitted for the predicted values by ambient temperature (T) and air pressure (P). In the windy regions, not only T and P but also  $v$  impacted the R values, and an equation for estimating the R values was developed in the windy regions. Air turbulence may introduce the uncertainties of the R values, therefore, the improved type with spoilers on the bottom of XAD-PAS were designed to decrease the uncertainties. The observed R values of the improved XAD-PAS in field were good agreement with the predicted R values only by  $T^{1.75}/P$ , indicating that the improved XAD-PAS can decrease the influence of wind.