

**BIOMONITORING OF TRACE METALS IN THE ATMOSPHERE
USING MOSS (*HYPNUM PLUMAEFORME* WILS.) IN THE NANLING MOUNTAINS AND THE
PEARL RIVER DELTA, SOUTHERN
CHINA**

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Atmospheric particulates with elevated trace metals may have a serious impact on human health. Biomonitoring using moss is a well-developed technique employed in many parts of the world to assess the concentrations of trace elements in the atmosphere and their potential sources. The suitability of the moss *Hypnum plumaeforme* Wils. as a new biomonitor of atmospheric trace element pollution in southern China was evaluated in the present study. The results showed that the moss had a good capacity to absorb and retain heavy metals such as Cd, Co, Cu, Cr, Pb, V and Zn. The northern part of the Nanling mountain range was found to have more trace elements than the southern range, possibly reflecting the long-range transport of pollutants from northern China. The elemental concentrations of the mosses in the northern range were found to be well correlated with elevations. The concentrations of heavy metals decreased as elevations increased, and became relatively constant above 1100 m a.s.l. The Pb isotopic compositions indicated that atmospheric inputs of Pb in mosses were mainly derived from anthropogenic sources, including vehicular emissions and Pb used in local industries.