

“质谱技术与环境应用”专栏

影响北京市2次生物质燃烧事件的表征

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摘要 采用气相色谱-质谱(GC/MS)法测定2005~2006年北京市31个总悬浮颗粒物(TSP)样品中生物质燃烧分子示踪物——左旋葡聚糖。城区样品左旋葡聚糖的平均含量为334 ng·m⁻³, 变化范围在34.6~1 307 ng·m⁻³之间, 与文献报道的台湾云林城区TSP样品的左旋葡聚糖含量水平相差不大, 与2003~2004年北京市颗粒物测定结果大体持平, 略有降低。通过测定左旋葡聚糖捕捉到影响北京的2次生物质燃烧事件, 即2005年10月6日和2006年6月21日邻近省份焚烧玉米秸和麦秸事件。利用气象卫星监测农田焚烧信息, 反向风迹图分析这2次事件的源地和传输路径。

关键词 [北京](#) [总悬浮颗粒物\(TSP\)](#) [气相色谱-质谱\(GC/MS\)](#) [左旋葡聚糖](#) [秸秆焚烧](#)

分类号

Characterization of Two Biomass Burning Episodes Affecting Air Quality in Beijing

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Abstract Atmospheric concentrations of levoglucosan, a molecular marker for biomass burning, were determined by gas chromatography-mass spectrometry(GC/MS) for 31 Beijing total suspended particle(TSP) samples collected during 2005—2006. The average concentration of downtown samples is 334 ng·m⁻³ with a range of 34.6—1 307 ng·m⁻³, which is comparable to the downtown TSP samples of Yunlin in Taiwan reported and slightly lower than the level in 2002—2003 study. Two biomass burning episodes were caught by the levoglucosan measurements. By resorting to the meteorological satellite fire spot information and wind backward trajectories computed by HYSPLIT software, the episodes on Oct.6, 2005 and June 21, 2006 were attributed to the burnings of corn and wheat stalk in neighboring provinces, respectively. The biomass burning sources and air mass transportation routes are discussed as well.

Key words [Beijing](#) [total suspended particle\(TSP\)](#) [gas chromatography-mass spectrometry\(GC/MS\)](#) [levoglucosan](#) [farmland corn stake burning](#)

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