Improved Biomass Burning Pollution in Beijing from 2011 to 2018

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Abstract

The prohibition of open straw burning and clean energy transitions implemented in the last 10 years, resulted in remarkable reductions in ambient biomass burning pollution in Beijing. Here, we present the reduction of biomass burning molecular tracer (i.e., levoglucosan) using year-long filter sample results collected in Beijing respectively during 2010-2011 and 2017-2018. The annual mean concentrations (95% CI) of levoglucosan during 2010-2011 and 2017-2018 were 0.34 (0.29 to 0.38) μg m^{-3} and 0.11 (0.09 to 0.13) μg m^{-3}, respectively, with a 67.1% decrease. Compared to 2011, the two traditional open biomass burning episodes in early summer and during the fall post-harvest season have disappeared in 2018. Meanwhile, the intensity and duration of biomass burning episodes during the heating season in 2017-2018 was much weaker and shorter than that in 2010-2011. Our results indicate that the implemented clean air action plans were effective in reducing open biomass burning, but the control of biofuel combustion activities during the heating season remains a major challenge in China.

Early Career Scientist

NO, I am not an early career scientist.

IGAC Activities

ACAM: Atmospheric Chemistry and the Asian Monsoon, BBURNED: Biomass Burning Uncertainty: ReactioNs, Emissions and Dynamics

IGAC Regional Working Groups

China Working Group