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Title:	How Much Does Large-Scale Crop Residue Burning Affect the Air Quality in Delhi?
Authors:	Sinha, B. (/jspui/browse?type=author&value=Sinha%2C+B.) Sinha, V. (/jspui/browse?type=author&value=Sinha%2C+V.)
Keywords:	Pollution Delhi Air quality
Issue Date:	2020
Publisher:	American Chemical Society
Citation:	Environ. Sci. Technol 54, (8), pp. 4790–4799.
Abstract:	Elevated PM _{2.5} concentrations frequently cause severe air pollution events in Delhi. Till recently, the effect of crop residue burning on the air quality in Delhi has not been fully quantified and the approaches to control the impact of fire emissions have not been effective. In this study, for the first time, we quantified the statewide contribution of post-monsoon crop residue burning in the northwestern states of India to surface PM _{2.5} concentrations in Delhi using several sensitivity experiments with the Weather Research and Forecasting model coupled with Chemistry (WRF-Chem) and FINNv1.5 fire emission inventory. Results were evaluated with ground-based observations in Delhi (21 stations), Punjab, and Haryana (14 stations). On average, ~20% of PM _{2.5} concentration in Delhi during the post-monsoon season (October–November) was found to be contributed by nonlocal fire emissions. However, on typical air pollution events, fire emissions contributed as high as 50–75% (80–120 µg/m ³) to PM _{2.5} in Delhi, highlighting the importance of both external transport and local emissions to PM _{2.5} pollution in Delhi.
Description:	Only IISERM authors are available in the record.
URI:	https://pubs.acs.org/doi/abs/10.1021/acs.est.0c00329 (https://pubs.acs.org/doi/abs/10.1021/acs.est.0c00329) http://hdl.handle.net/123456789/3306 (http://hdl.handle.net/123456789/3306)
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