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Title:	Odd-even traffic rule implementation during winter 2016 in Delhi did not reduce traffic emissions of VOCs, carbon dioxide, methane and carbon monoxide
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Keywords:	Odd-even rule PTR-MS VOCs Traffic
Issue Date:	2018
Publisher:	Indian Academy of Sciences
Citation:	Current Science, 144(6), pp. 1318-1325
Abstract:	We studied the impact of the odd-even traffic rule (implemented in Delhi during 1-15 January 2016) on primary traffic emissions using measurements of 13 volatile organic compounds, carbon monoxide, carbon dioxide and methane at a strategic arterial road in Delhi (28.57°N, 77.11°E, 220 m amsl). Whole air samples (n = 27) were collected during the odd-even rule active (OA) and inactive (OI) days, and analysed at the IISER Mohali Atmospheric Chemistry Facility. The average mass concentration ranking and toluene/ benzene ratio were characteristic of primary traffic emissions in both OA and OI samples, with the largest fraction comprising aromatic compounds (55- 70% of total). Statistical tests showed likely increase ($p \leq 0.16$; OA > OI) in median concentration of 13 out of 16 measured gases during morning and afternoon periods (sampling hours: 07: 00-08: 00 and 13: 30- 14: 30 IST), whereas no significant difference was observed for evening samples (sampling hour: 19: 00- 20: 00 IST). This suggests that many four-wheeler users chose to commute earlier, to beat the 8: 00 AM- 8: 00 PM restrictions, and/or there was an increase in the number of exempted public transport vehicles. Thus, the odd-even rule did not result in anticipated traffic emission reductions in January 2016, likely due to the changed temporal and fleet emission behaviour triggered in response to the regulation.
Description:	Only IISER authors are available in the record.
URI:	https://www.currentscience.ac.in/Volumes/114/06/1318.pdf (https://www.currentscience.ac.in/Volumes/114/06/1318.pdf) http://hdl.handle.net/123456789/2249 (http://hdl.handle.net/123456789/2249)
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