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**OXIDATIVE POTENTIAL OF PARTICULATE MATTER COMPONENTS
GENERATED BY SPECIFIC EMISSION SOURCES**

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Abstract

Different acellular assays are currently used for the determination of the oxidative potential (OP) of particulate matter (PM). In order to better understand the existing correlations between OP and the PM generated by specific emission sources, dusts generated from seven different sources (urban dust, soil, road dust, brake dust, pellet ash, coke, and desert dust) were chemically characterised and analysed using three OP assays: dithiothreitol (DTT), acid ascorbic (AA) and 2',7'-dichlorofluorescein (DCFH).

In agreement with some previous literature studies, these assays provided very different results for each selected dust: their reliability as a proxy of ROS generation in biological system need then to be further investigated. When applied to the soluble fraction of these dusts, the DTT and AA assays were particularly sensitive toward pellet ash, while the highest OP^{DCFH} values were measured for road dust. Multivariate analysis was used to confirm the correlations between the OP assay results and the chemical characteristics of the dust soluble fractions. DTT and AA assays appeared mostly influenced by organic and inorganic components, respectively. In the case of the DCFH assay, no clear correlations

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