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Citation for final published version:

Lui, K. H., Jones, Tim, Berube, Kelly, Sai Hang Ho, Steven, Yim, S. H. L, Cao, Jun-Ji, Lee, S. C., Tian, Linwei, Wi Min, Dae and Ho, K. F. 2019. The effects of particle-induced oxidative damage from exposure to airborne fine particulate matter components in the vicinity of landfill sites on Hong Kong. *Chemosphere* 230 , pp. 578-586. 10.1016/j.chemosphere.2019.05.079 filefilefile

Publishers page: <https://doi.org/10.1016/j.chemosphere.2019.05.079>
<<https://doi.org/10.1016/j.chemosphere.2019.05.079>>

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Highlights:

- Diurnal PM_{2.5} concentration variations were observed near the landfill sites
- Landfill combustion activities were significant sources of soot aggregate particles
- PAHs, Cd and Pb showed significant associations with DNA damage
- Regional source was possibly a dominant factor of DNA damage against from landfill