Chemical characteristics of $PM_{2.5–0.3}$ and $PM_{0.3}$ and consequence of a dust storm episode at an urban site in Lebanon

Mireille Borgie, Frédéric Ledoux, Zeina Dagher, Anthony Verdin, Fabrice Cazier, Lucie Courcot, Pirouz Shirali, Hélène Greige-Gerges, Dominique Courcot

PII: S0169-8095(16)30144-2
DOI: doi: 10.1016/j.atmosres.2016.06.001
Reference: ATMOS 3706

To appear in: *Atmospheric Research*

Received date: 18 December 2015
Revised date: 24 May 2016
Accepted date: 1 June 2016

Chemical characteristics of $PM_{2.5-0.3}$ and $PM_{0.3}$ and consequence of a dust storm episode at an urban site in Lebanon

Mireille BORGIE[1,2], Frédéric LEDOUX[1,*], Zeina DAGHER[3], Anthony VERDIN[1], Fabrice CAZIER[4], Lucie COURCOT[5], Pirouz SHIRALI[1], Hélène GREIGE-GERGES[2,6], Dominique COURCOT[1]

[1]Unité de Chimie Environnementale et Interactions sur le Vivant (UCEIV), EA 4492, Université du Littoral Côte d'Opale, 145 Avenue Maurice Schumann, 59140 Dunkerque, France

[2]Bioactive Molecules Research Group, Doctoral School of Sciences and Technologies, Lebanese University, Lebanon

[3]Department of Biology, Faculty of Sciences-2, Lebanese University, Lebanon

[4]Centre Commun de Mesures, Université du Littoral Côte d'Opale, 145 Avenue Maurice Schumann, 59140 Dunkerque, France

[5]Laboratoire d'Océanologie et de Géosciences, LOG UMR 8187, Univ. Littoral Côte d'Opale, 32 Avenue Foch, F-62230 Wimereux, France

[6]Department of Chemistry and Biochemistry, Faculty of Sciences-2, Lebanese University, Lebanon

[*]Corresponding author: Frederic.Ledoux@univ-littoral.fr[1]

Abstract

Ace, acenaphtene; Acy, acenaphtylene; Anth, Anthracene; B[a]An, benzo[a]anthracene; B[a]P, benzo[a]Pyrene; B[b]Fl, benzo[b]fluoranthene; B[e]P, benzo[e]pyrene; B[ghi]Pe, benzo[g,h,i]perylene; B[k]F,: benzo[k]fluoranthene; Chr, chrysene; DiB[a,h]An, dibenzo[a,h]anthracene; EF, enrichment factor; Fla, fluoranthene; Flu, fluorene; FP, fine particle; HYSPLIT, hybrid single-particles lagrangian integrated trajectory; InPy, indeno[1,2,3-cd]pyrene; ME, major elements; Nap, naphthalene; PAH, polycyclic aromatic hydrocarbon; Phe, phenanthrene; PM, particulate matter; Pyr, pyrene; SII, secondary inorganic ions; TC, total carbon; TE, trace elements; UFP, ultrafine particle; WHO, world health organization.