

NEWS

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JEM News

Mike Sharpe provides a summary of the latest environmental news, literature and legislation.

PAPERS

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Development of an improved methodology to detect infectious airborne influenza virus using the NIOSH bioaerosol sampler

G. Cao, J. D. Noti,* F. M. Blachere, W. G. Lindsley and D. H. Beezhold

Coughing generates a broad size range of aerosol particles which may transmit influenza. A methodology to detect influenza on fractionated aerosols is presented.

Micronucleus study of the quality and mutagenicity of surface water from a semi-arid region

Anuska Conde Fagundes Soares Garcia,
Alexandre Endres Marcon, Douglisnilson de Moraes Ferreira,
Esdras Adriano Barbosa dos Santos, Viviane Souza do Amaral
and Sílvia Regina Batistuzzo de Medeiros*

Surface water contaminated by heavy metals, cyanobacteria and β radiation increased chromosomal mutations showing that CBMN assay validated Trad-MCN for water analysis. Water genotoxins can be responsible for high cancer rates.

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Occurrence, source apportionment and toxicity assessment of polycyclic aromatic hydrocarbons in surface sediments of Chaohu, one of the most polluted lakes in China

Ji-Zhong Wang,* Kai Zhang, Bo Liang and Eddy Y. Zeng

Occurrence, toxicity assessment and source appointment of 28 PAHs in sediment from Chaohu Lake, China, were determined.

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A feeding inhibition based prediction of the toxic effect of dissolved metal mixtures upon *Echinogammarus marinus* (Crustacea: Amphipoda) at field relevant concentrations across a latitudinal gradient

M. Ramiro Pastorinho,* Trevor C. Telfer,
Amadeu M. V. M. Soares and António J. A. Nogueira

Laboratory–field metal toxicity extrapolation is attempted using environmentally realistic concentrations. Latitude as source of variability in population response is addressed.

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Acute and reproductive toxicity of nano-sized metal oxides (ZnO and TiO₂) to earthworms (*Eisenia fetida*)

Jaclyn E. Cañas,* Beibei Qi, Shibin Li, Jonathan D. Maul,
Stephen B. Cox, Sriya Das and Micah J. Green

The majority of nano-metal oxide research addressing potential toxicological issues has been focused in aquatic environments with very little terrestrial data. This study characterized the toxicity of zinc oxide (ZnO) and titanium dioxide (TiO₂) to earthworms (*Eisenia fetida*) in a terrestrial system.

Sources of organochlorine pesticides in air in an urban Mediterranean environment: volatilisation from soil

Gerhard Lammel,* Jana Klánová, Ljiljana Erić, Predrag Ilić, Jiří Kohoutek and Igor Kovacić

Organochlorine pesticides were measured in soil and air in Banja Luka, Bosnia and Herzegovina. Although the soil was only moderately contaminated, volatilisation of HCH isomers and HCB from soils was verified by negative vertical concentration gradients in air.

Twenty years of temporal change in perfluoroalkyl sulfonate and carboxylate contaminants in herring gull eggs from the Laurentian Great Lakes

Wouter A. Gebbink,* Robert J. Letcher,* Craig E. Hebert and D.V. Chip Weseloh

Temporal trends and patterns of major C₄ to C₁₅ chain length PFCAs and PFSA and some sulfonamide, fluorotelomer acid and alcohol precursors were determined in herring gull egg pools.

Impact of a NO₂-regenerated diesel particulate filter on PAH and NPAH emissions from an EURO IV heavy duty engine

Matteo Carrara* and Reinhard Niessner

We explain to which extent a modern diesel particulate filter could support the formation of highly mutagenic nitrated polycyclic aromatic hydrocarbons (NPAHs) by nitration of pre-existing PAHs.

Iron-rich Oklahoma clays as a natural source of chromium in monitoring wells

Dane Scott, Allen Aplett and Nicholas F. Materer*

In monitoring wells, goethite, an iron oxide hydroxide from dissolution of chromium containing iron clays, is a natural chromium source.

Comparison of periphytic biofilm and filter-feeding bivalve metal bioaccumulation (Cd and Zn) to monitor hydrosystem restoration after industrial remediation: a year of biomonitoring

Adeline Arini,* Magalie Baudrimont, Agnès Feurtet-Mazel, Alexandra Coynel, Gérard Blanc, Michel Coste and François Delmas

This study demonstrates the effectiveness of a combined assessment using bivalves and biofilms to get an integrated view of water quality assessment.

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Stable isotopes and C/N ratios in marine sediments as a tool for discriminating anthropogenic impact

P. Rumolo,* M. Barra, S. Gherardi, E. Marsella and M. Sprovieri

Sources of anthropogenic pollution were categorised by combining elemental and isotopic techniques (C/N ratios and $\delta^{13}\text{C}$, $\delta^{15}\text{N}$) on samples of surficial sediments in the harbour of Naples.

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Contaminants in water, sediment and fish biomonitor species from natural and artificial estuarine habitats along the urbanized Gold Coast, Queensland

Nathan J. Waltham,* Peter R. Teasdale and Rod M. Connolly

Contaminants in water, sediment and fish species in Gold Coast waterways, Queensland.

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Cycling of rare earth elements in the atmosphere in central Tokyo

Yoshinari Suzuki, Shimpei Hikida and Naoki Furuta*

Cycling of rare earth elements (REEs) was discussed by determining concentrations of 14 REEs in six size classes of APM and two different phases in rainwater by ICP-MS.

Distribution and health-risk of polycyclic aromatic hydrocarbons in soils at a coking plant

Wanhui Zhang, Chaohai Wei,* Chunhua Feng, Zhe Yu, Man Ren, Bo Yan, Pingan Peng and Jiamo Fu

The concentrations of PAHs were determined in and around an industrial area, and the health-risk was assessed to the workers.

An integrated air quality forecast system for a metropolitan area

Claudio Carnevale, Giovanna Finzi,* Enrico Pisoni, Vikas Singh and Marialuisa Volta

An integrated modelling system has been developed to forecast daily maximum eight hours ozone concentrations and daily mean PM10 concentrations.

Techno-economical efficiency and productivity change of wastewater treatment plants: the role of internal and external factors

F. Hernández-Sancho,* M. Molinos-Senante and R. Sala-Garrido

Dynamic efficiency and productivity change over time of wastewater treatment plants in order to optimise resource-use. Identification of the environmental factors to improve the sustainability of the wastewater treatment plants.

Mercury emission and dispersion models from soils contaminated by cinnabar mining and metallurgy

Willians Llanos, David Kocman, Pablo Higuera and Milena Horvat

Our work describes and models mercury emissions by contaminated soils, on the basis of experimental and measured data and soil characteristics.

Relationship between CH₄ and N₂O flux from soil and their ambient mixing ratio in a riparian rice-based agroecosystem of tropical region

A. Datta,* S. C. Santra and T. K. Adhya

Temporal variations of ambient mixing ratio of greenhouse gas (CH₄ and N₂O) in a riparian rice-based agro-ecosystem of tropical region were studied during 2005–2006 in coastal Odisha.

Rapid one-step assays for on-site monitoring of mouse and rat urinary allergens

Marjo Koets,* Anne Renström, Eva Zahradnik, Jelena Bogdanovic, Inge M. Wouters and Aart van Amerongen

One-step sensitive immunoassays for on-site demonstration of exposure to rodent allergens, especially useful in occupational hygiene practice.

TECHNICAL NOTE

Transport of *Cryptosporidium parvum* oocysts in sandy soil: Impact of length scale

Johanna Santamaría, Maria de J. Quinonez-Diaz, Luke LeMond, Robert G. Arnold, David Quanrud, Charles Gerba and Mark L. Brusseau*

We investigate the impact of travel distance on the retention and transport of *Cryptosporidium* oocysts in a sandy soil.