The Croatian GEOTRACES activities in the last year were mainly related to: 1) improvement of electrochemical methods which, in combination with ICPMS, are used for trace metals speciation (including interaction with organic matter and sulfur species), determination and quantification (mostly Zn, Cd, Pb, Cu, Fe, Ni, Co); 2) development of an automated system for determination of trace metals in natural waters (Voltammetric AutoAnalyser - Volt-AA); 3) research on development of electroanalytical methods for chalcogenide and other metal containing nanoparticles determination in natural waters.

**Field works**
- Participation in the field work at Rogoznica Lake in Croatia where we used electrochemical and ICPMS methods for sulfur and trace metals speciation in oxic and anoxic water column.

**Projects**
- A multilateral project in the frame of the French MERMEX program called “Metal contaminants in Mediterranean Coastal Environment” (COMECOM/MERMEX) started in January 2014. Partners from France, Italy, Croatia, Lebanon and Algeria will focus their research to target locations such as river inputs, large coastal cities and ports. Behavior of trace metals in relation to their distribution and speciation influenced by variable local environmental conditions (e.g. salinity), as well as by global problem of ocean acidification will be of particular concern.
- Chinese - Croatian bilateral project: "Determination of trace metal speciation in coastal waters: towards developing new criteria for water quality control and risk assessment" (project leaders Rujun Yang and Ivanka Pizeta, members of SCOR WG139). Croatian scientists visited Ocean University of China in Qingdao (10. to 18. April 2014.)
- Germany – Croatian bilateral project “Arsenic speciation on the phase boundaries: salt/fresh water and oxia/anoxia (project leaders E. Bura-Nakić, Britta Planer-Friedrich, Bayreuth University, Bayreuth, Germany).

One PhD student completed Short Term Scientific Missions (STSM) (February-April 2014) in the frame of COST action ES1205 within the project “Characterization of chalcogenide nanoparticles by electrochemical methods and comparison with sizing techniques (Dynamic Light, Scattering, Fluorescence Correlation Spectroscopy and Nanoparticle Tracking Analysis) in environmentally relevant conditions”.

**Participation at international conferences**
Publications


• CUKROV, Neven; CUCULIĆ, Vlado; BARIŠIĆ, Delko; LOJEN, Sonja; LOVRENČIĆ MIKELIĆ, Ivanka; OREŠČANIN, Višnja; VDOVIĆ, Neda; FIKET, Željka; ČERMELJ, Branko; MLAKAR, Marina. Elemental and isotopic records in recent fluviolacustrine sediments in karstic river Krka, Croatia. // Journal of geochemical exploration. 134 (2013); 51-60.

• CUNLIFFE, Michael; ENGEL, Anja; FRKA, Sanja; GAŠPAROVIĆ, Blaženka; GUITART, Carlos; MURRELL, Colin J.; SALTER, Matthew; STOLLE, Christian; UPSTILL-GODDARD, Robert; WURL, Oliver. Sea surface microlayers: a unified physicochemical and biological view of the air-ocean interface. // Progress in oceanography. 109 (2013); 104-116.

• FILIPOVIĆ MARIJIĆ, Vlatka; VARDIĆ SMRZLIĆ, Irena; RASPOR, Biserka. Effect of acanthocephalan infection on metal, total protein and metallothionein concentrations in European chub from a Sava River section with low metal contamination. // Science of the total environment. 463-464 (2013); 772-780.


• FRANČIŠKOVIĆ-BILINSKI, Stanislav; CUCULIĆ, Vlado; BILINSKI, Halka; HÄUSLER, Hermann; STADLER, Philipp. Geochemical and stable isotopic variability within two rivers rising under the same mountain, but belonging to two distant watersheds. // Chemie der Erde - Geochemistry. 73 (2013), 3; 293-308.

• GRAHEK, Željko; MILANOVIĆ, Ivana; NODILO, Marijana; ROŽMARIĆ, Martina. Sequential separation of Fe and Sr from liquid samples by using Sr resin and rapid determination of 55Fe and 89,90Sr. // Applied radiation and isotopes. 81 (2013); 42-48.

• JURINA, Irena; IVANIĆ, Maja; TROSKOT-ORBI, Tamara; BARIŠIĆ, Delko; VDOVIĆ, Neda; SONDI, Ivan. Activity concentrations and distribution of radionuclides in surface and core sediments of the Neretva Channel (Adriatic Sea, Croatia). // Geologia Croatica. 66 (2013), 2; 143-150.


• KRAŠNIĆI, Nesrete; DRAGUN, Zrinka; ERK, Marijana; RASPOR, Biserka. Distribution of selected essential (Co, Cu, Fe, Mn, Mo, Se, Zn) and nonessential (Cd, Pb) trace elements among protein fractions from hepatic cytosol of European chub (Squalius cephalus L.). // Environmental science and pollution research. 20 (2013), 4; 2340-2351.

• LENOBLE, Veronique; OMANOVIĆ, Dario; GARNIER, Cedric; MOUNIER, Stephane; DÖNLAGIĆ, Nusreta; Le POUPION, Christophe; PIŽETA, Ivanka. Distribution and chemical speciation of arsenic and heavy metals in highly contaminated waters used for
health care purposes (Srebrenica, Bosnia and Herzegovina). // Science of the total environment. 443 (2013); 420-428.


- MATIĆ, Natalija; MIKLAVČIĆ, Igor; MALDINI, Krešimir; TOMAS, Damir; CUCULIĆ, Vlado; CARDELLINI, Carlo; FRANČIŠKOVIĆ-BILINSKI, Stanislav. Geochemical and isotopic characteristics of karstic springs in coastal mountains (Southern Croatia). // Journal of geochemical exploration. 132 (2013); 90-110.

- OURSEL, Benjamin; GARNIER, Cédric; DURRIEU, Gaël; MOUNIER, Stéphane; OMANOVIĆ, Dario; LUCAS, Yves. Dynamics and fates of trace metals chronically input in a Mediterranean coastal zone impacted by a large urban area. // Marine pollution bulletin. 69 (2013), 1/2; 137-149.

- SUPERVILLE, Pierre-Jean; PIŽETA, Ivanka; OMANOVIĆ, Dario; BILLON, Gabriel. Identification and on line monitoring of reduced sulphur species (RSS) by voltammetry in oxic waters. // Talanta. 112 (2013); 55-62.

- ŽIC Vesna; CARIĆ Marina; CIGLENEČKI JUŠIĆ Irena. The impact of natural water column mixing on iodine and nutrient speciation in a eutrophic anchialine pond (Rogoznica Lake, Croatia). // Estuarine, coastal and shelf science. 133 (2013); 260-272.

- Milanović, Ivana; Krznarić, Damir; Bura-Nakić, Elvira; Ciglenečki, Irena. Deposition and dissolution of metal sulfide layers at a Hg electrode surface in seawater electrolyte conditions. // Environmental chemistry. 11 (2014) 167-175.

- Dautović, Jelena; Fiket, Željka; Barešić, Jadranka; Ahel, Marijan; Mikac, Nevenka, Sources, distribution and behavior of major and trace elements in a complex karst lake system. // Aquatic geochemistry. 20 (2014) , 1; 19-38.

- Cobelo-Garcia, Antonio; Santos-Echeandia, Juan; Lopez-Sanchez, Daniel; Almecija, Clara; Omanović, Dario. Improving the voltammetric quantification of ill-defined peaks using second derivative signal transformation: example of the determination of platinum in water and sediments. Analytical chemistry. 86 (2014) 2308-2313.

- Dang, Huy D.; Tessier, Erwan; Lenoble, Véronique; Durrieu, Gaël; Omanović, Dario; Mullot, Jean-Ulrich; Pfeifer, Hans-Rudolf; Mounier, Stéphane; Garnier, Cédric. Key parameters controlling arsenic dynamics in coastal sediments: An analytical and modeling approach. // Marine chemistry. 161 (2014) 34-46.

- OurSEL, Benjamin; Garnier, Cédric; Pairaud, Ivane; Omanović, Dario; Durrieu, Gaël; Syakti, Agung Dhamar; Le Poupon, Christophe; Thouvenin, Bénédicte; Lucas, Yves. Behaviour and fate of urban particles in coastal waters: Settling rate, size distribution and metals contamination characterization. Estuarine, coastal and shelf science. 138 (2014) 14-26.

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