

## Jakub Hruska

### Affiliation:

Czech Geological Survey, Department of Environmental Geochemistry and Biogeochemistry, Prague, Czech Republic; E-mail: jakub.hruska@geology.cz; cellular phone: +420-728452967

### Research interests:

Biogeochemical modeling, small catchment studies, soil and water acidification, biogeochemical cycles of elements

### Education:

2010 Associated Professor, Faculty of Sciences, Charles University, Prague

1994 Ph.D. in Geochemistry, Czech Geological Survey, Prague

1989 RNDr. in Analytical Chemistry, Charles University, Prague

### Selected publications:

- Moldan F., Hruska J., Evans C.D., Hauhs M. (2011) Experimental simulation of the effects of extreme climatic events on major ions, acidity and dissolved organic carbon leaching from a forested catchment, Gardsjon, Sweden. *Biogeochemistry*, in press.
- Bencokova A., Kram P., Hruska J. (2011) Future climate and flow patterns changes in Czech headwater catchments. *Climate Research*, in press.
- Oulehle F., Hleb R., Houska J., Samonil P., Hofmeister J., Hruska J. (2010) Anthropogenic acidification effects in primeval forests in the Transcarpathian Mts. Western Ukraine. *Science of the Total Environment* 408: 856-864.
- Wright R.F., Aherne J., Bishop K., Dillon P.J., Erlandsson M., Evans C.D., Forsius M., Hardekopf D.W., Helliwell R., Hruska J., Hutchins M., Kaste O., Kopáček J., Kram P., Laudon H., Moldan F., Rogora M., Sjoeng A.M.S., de Wit H.A. (2010). Interaction of climate change and acid deposition. In: Battarbee R., Moss B., Kernan M. (eds.) *Climate change impacts on freshwater ecosystems*. Blackwell Publishing, Oxford, 152-179.
- Kram P., Hruska J., Driscoll C.T. Johnson C.E., Oulehle F. (2009) Long-term changes in aluminum fractions of drainage waters in two forest catchments with contrasting lithology. *Journal of Inorganic Biochemistry* 103: 1465-1472.
- Kram P., Oulehle F., Stedra V., Hruska J., Shanley J.B., Minocha T., Traister E. (2009) Geocology of a forest watershed underlain by serpentine in central Europe. *Northeastern Naturalist*, 16, Spec. 5: 309-328.
- Oulehle F., Hruska J. (2009) Rising trends of dissolved organic matter in drinking-water reservoirs as a result of recovery from acidification in the Ore Mts., Czech Republic. *Environmental Pollution* 157: 3433-3439
- Hruska J., Kram P., McDowell W.H., Oulehle F. (2009) Increased dissolved organic carbon (DOC) in Central European streams is driven by reductions in ionic strength rather than climate change or decreasing acidity. *Environmental Science and Technology*, 43: 4320-4326.
- Hofmeister J., Oulehle F., Kram P., Hruska J. (2008) Loss of nutrients caused by litter raking as compared with an effect of acid deposition. *Biogeochemistry* 88: 139-151.
- Oulehle F., McDowell W.H., Aitkenhead-Peterson J.A., Kram P., Hruska J., Navratil T., Buzek F., Fottova D. (2008) Long-term trends in stream nitrate concentrations and losses across watersheds undergoing recovery from acidification in the Czech Republic. *Ecosystems* 11: 410-425.
- Oulehle F., Hofmeister J., Hruska J. (2007) Modelling of the long-term effect of tree species (Norway spruce and European beech) on soil acidification in the Ore Mountains. *Ecological Modelling* 204: 359-371.
- Navratil T., Kurz D., Kram P., Hofmeister J., Hruska J. (2007). Acidification and recovery of soil at a heavily impacted forest catchment (Lysina, Czech Republic) – SAFE modeling and field results. *Ecological Modelling* 205: 464-474.
- Oulehle F., Hofmeister J., Cudlin P., Hruska J. (2006) The effect of reduced atmospheric deposition on soil and soil solution chemistry at a site subjected to long-term acidification, Nacetin, Czech Republic. *Journal of the Total Environment* 370: 532-544.
- Wright R.F., Aherne J., Bishop K., Camarero L., Cosby B.J., Erlandsson M., Evans C.D., Forsius M., Hardekopf D.W., Helliwell R., Hruska J., Jenkins A., Kopacek J., Moldan F., Posch M., Rogora M. (2006) Modelling the effect of climate change on recovery of acidified freshwaters: Relative sensitivity of individual processes in the MAGIC model. *Science of the Total Environment* 365: 154-166.
- Aitkenhead-Peterson J.A., Alexander, J.E., Albrechtova, J., Lhotaková, Z., Huntley, R., Rock, B., Cudlin, P., Kram, P., Hruska, J., Polak, T., Oulehle, F., McDowell, W.H. (2006). Linking foliar chemistry to forest floor solid and solute phase organic C and N in *Picea abies* (L.) Karst stands in northern Bohemia. *Plant and Soil* 283: 187-201.

- Oulehle F., Hruska J. (2005) Tree species (*Picea abies* and *Fagus sylvatica*) effect on soil water acidification and aluminium chemistry at sites subjected to long-term acidification in the Ore Mts. Czech Republic. *Journal of Inorganic Biochemistry* 99: 1822-1829.
- Novak M., Kirchner J.W., Fottova D., Prechová E., Jackova I., Kram P., Hruska J. (2005) Isotopic evidence for processes of sulfur retention/release in 13 forested catchments spanning a strong pollution gradient (Czech Republic, Central Europe). *Global Biogeochemical Cycles* 19: Art. No. GB4012, 14 pp.
- Laudon H., Hruska J., Kohler S. and Kram P. (2005) Predicting episodic stream water acidification and recovery in a heavily impacted catchment. *Environmental Science and Technology* 39: 3197-3202.
- Shanley J.B., Kram P., Hruska J., Bullen T.D. (2004) A biogeochemical comparison of two well-buffered catchments with contrasting histories of acid deposition. *Water, Air, and Soil Pollution: Focus* 4/2-3: 325-342.
- Hruska J., Kohler S., Laudon H., Bishop K. (2003) Is a Universal Model of Organic Acidity Possible: Comparison of the Acid/Base Properties of Dissolved Organic Carbon in the Boreal and Temperate Zones. *Environmental Science and Technology* 37: 1726-1730.
- Hruska J., Kram P. (2003) Modelling of long-term changes of streamwater chemistry in two catchments with contrasting vulnerability to acidification. *Hydrology and Earth System Sciences* 7: 525-539.
- Lorz, C., Hruska J., Kram P. (2003) Modeling and monitoring of long term acidification in an upland catchment of the Western Ore Mountains, SE-Germany. *Science of the Total Environment* 310: 153-161.
- Hruska J., Moldan F., Kram P. (2002) Recovery from acidification in Central Europe - observed and predicted changes of soil and streamwater chemistry in the Lysina catchment, Czech Republic. *Environmental Pollution* 120: 261-274.
- Kram P., Laudon H., Bishop K.H., Rapp L., Hruska J. (2001) MAGIC modeling of long-term lake water and soil chemistry at Abborrtrasket, Northern Sweden. *Water, Air, and Soil Pollution* 130: 1301-1306.
- Hruska J., Laudon H., Johnson C.E., Kohler S., Bishop K. (2001) Acid/base character of organic acids in boreal stream during snowmelt. *Water Resources Research* 37: 1043-1026.
- Hruska J., Cudlin P., Kram P. (2001) Relationship between Norway spruce status and soil water base cations/aluminum ratios in the Czech Republic. *Water, Air and Soil Pollution* 130: 983-988.
- Bishop K., Hruska J., Kram P., Kohler S., Laudon H., Lofgren S. (2001) Does acidification policy follow research in northern Sweden? The case of natural acidity during the 1990's. *Water, Air, and Soil Pollution* 130: 1415-1420.
- Kram P., Santore R.C., Driscoll C.T., Aber J.D., Hruska J. (1999) Application of the forest-soil-water model (PnET-BGC/CHES) to the Lysina catchment, Czech Republic. *Ecological Modelling* 120: 9-33.
- Kram P., Hruska J., Driscoll C.T. (1998) Beryllium chemistry in the Lysina catchment, Czech Republic. *Water, Air, and Soil Pollution* 105: 391-397.
- Hruska J., Johnson C.E., Kram P., Liao C.-Y. (1997) Organic solutes and the recovery of a bog stream from chronic acidification. *Environmental Science and Technology* 31: 3677-3681.
- Kram P., Hruska J., Wenner B.S., Driscoll C.T., Johnson C.E. (1997) The biogeochemistry of basic cations in two forest catchments with contrasting lithology in the Czech Republic. *Biogeochemistry* 37: 173-202.
- Hruska J., Johnson C.E., Kram P. (1996) The role of organic solutes in the chemistry of acid-impacted bog waters of the western Czech Republic. *Water Resources Research* 32: 2841-2851.
- Kram P., Hruska J., Driscoll C.T., Johnson C.E. (1995) Biogeochemistry of aluminum in a forest catchment in the Czech Republic impacted by atmospheric inputs of strong acids. *Water, Air, and Soil Pollution* 85: 1831-1836.
- Buzek F., Hruska J., Kram P. (1995) Three-component model of runoff generation, Lysina catchment, Czech Republic. *Water, Air, and Soil Pollution* 79: 391-408.
- Kram, P., Hruska, J. (1994) Influence of bedrock geology on elemental fluxes in two forested catchments affected by high acidic deposition. *Applied Hydrogeology* 2/2: 50-58.
- Hruska J., Kram P. (1994) Aluminium chemistry of the root zone of forest soils affected by acidic deposition at the Lysina catchment, Czech Republic. *Ecological Engineering* 3: 5-16.

#### **Service to the scientific community and public administration:**

Member of the journal Editorial Board of Environmental Pollution (2004-2009). Deputy Director of the Czech Geological Survey for research and head of the Department of Geochemistry and Laboratories (2004-2007), Vice-chair of the Czech National Committee for the International Long Term Ecological Research (ILTER), Member of Council of the Minister of Natural Environment for National Parks, Scientific Council of the Krkonose National Park, Scientific Council of the Sumava National Park, Scientific Council of Charles University (Faculty of Sciences).