Geophysical Research Abstracts, Vol. 8, 05894, 2006
SRef-ID: 1607-7962/gra/EGU06-A-05894
© European Geosciences Union 2006

Towards a global network for monitoring isotopes in rivers

T. Vitvar, P. Aggarwal and A. Herczeg

International Atomic Energy Agency, Isotope Hydrology Section, Vienna, Austria

(t.vitvar@iaea.org / Fax: ++43 1 26007 / Phone: ++43 1 260021741)

This paper presents the IAEA coordination activity towards a new Global Network for monitoring water Isotopes in Rivers (GNIR). The network seeks to augment conventional runoff and water chemistry monitoring data with stable isotope data to determine the impact of climate and land use changes on stream water quality and quantity. The network should also help to manage river water use and regulations of stream channels in areas with scarce river runoff, which presently account for about 20% of the total land area, but produce only 2.3% of the total runoff. The GNIR network has been systematically built as a coordinated research project under the auspices of IAEA over the past decade. Selected examples of the use of isotopes in stream water will be presented. The current preparatory network consists of about 100 river stations worldwide, established through IAEA-supported activities or addition of already existing national isotopic networks (Germany, Austria, Switzerland). The operational protocol requires regular isotopic monitoring at the river outlet, in the midstream and in the headwaters. The GNIR will become operational in 2007 as part of an extended IAEA programme of monitoring of isotopes in the water cycle, which also includes the existing GNIP (Global Network of Isotopes in Precipitation) and the ongoing MIBA (Moisture Isotopes in Biosphere and Atmosphere). It is linked with global river discharge (Global Runoff Data Center) and water quality (GEMS/Water) networks and seeks to engage international attention and encourage and help countries that share rivers to manage their trans-boundary resources.