ASSESSMENT OF GROSS ALPHA AND BETA ACTIVITY IN DRINKING WATERS OF GÜMÜSHANE, TURKEY

Selim Kaya, Ali Kaya, Salih Mustafa Karabıdak, Necati ÇeLİK
selimkaya@gumushane.edu.tr

This research aimed to assess radioactivity levels of gross alpha and beta activity in the drinking waters of the Gumushane province, Turkey. The aggregate Alpha-Beta analysis of collected samples from local water sources have been done at the Küçükçekmece Atomic Energy Institute of Turkey in İstanbul. The measurements were conducted using a Berthold LB 770 type, a gas proportional alpha/beta counter with low background multiple detector system. The activity of gross alpha and beta were ranged from 7 to 49 mBq.L-1with an average value of 14.7 mBq.L-1 and from 10 to 117 mBq.L-1with an average value of 46.6 mBq.L-1, respectively. It has been found that radioactivity levels in Gümüşhane drinking waters are below the limits of constituting a health hazard for the public.

BOHR HAMILTONIAN FOR GAMMA=30 WITH THE KRATZER POTENTIAL

I. Yığıtoglu, E. Ozer, B. Ucar
ucarburcu1006@gmail.com

The Z(4) symmetry was proposed to describe the critical point symmetry for prolate to oblate shape-phase transitions. In the case in which the potential has a minimum around gamma=30 . In this study the beta part of Bohr Hamiltonian for gamma=30 is solved with Kratzer potential using the Nikiforov-Uvarȍv method. The obtained energy spectra and the calculated B(E2) transition rates are presented and compared with existing experimental data.