

Evaluation of radon concentration in artificial saline for speleotherapy and haloaerosoltherapy

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The results presented in this paper show the radiometric measurements of the natural radiation background from the artificial saline, made at INRMFB – Bucharest, Romania, for speleotherapeutic and medical purposes. The measurements were made as a part of a complex study from a radioactive, medical and biological point of view for an innovative use of the factors found in salt mines, caves and artificial saline that have a therapeutically potential in health care. The knowledge of radon concentration levels in underground environments and artificial saline is essential for therapeutic purposes of different respiratory and rheumatic diseases. In order to develop speleotherapy in Romania, this paper presents the results of an indoor radon concentration levels survey in artificial saline,

during multidisciplinary studies conducted in the last years, in the presence and absence of patients with chronic respiratory diseases. The survey was carried out using radon monitor Pylon AB-5 system, Berthold Umo LB123 portable integrated impulse debit meter, low background system Protean Ortec MPC-2000–DP and gamma spectrometer Ortec with HPGe detector, in order to investigate whether differences in microclimate parameters translate into significant differences in artificial saline indoor radon concentrations. The concentration of radon in the atmosphere of the artificial saline was found to be between 121 ± 7 Bq/m³ and 140 ± 8 Bq/m³, depending on the location of the measurement points, of the ventilation state and the number of patients.