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技术及应用

^{220}Rn对Radtrak氡探测器的影响及其修正

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摘要 对甘肃调查使用的Radtrak探测器进行了研究和改进。由于Radtrak探测器采用了高渗透性的滤膜，在暴露期间，^{220}Rn可随^{222}Rn进入探测器。传统土结构窑洞和房屋中高水平^{220}Rn的影响，使得^{222}Rn的测量结果高出实际水平2~3倍。通过改变气体交换率，对探测器进行了改进。改进后的探测器可有效分辨^{220}Rn和^{222}Rn。根据探测器的灵敏度和房间内^{220}Rn的分布，提出了对甘肃调查数据修正的可能性，并与实际测量结果进行了比较。

关键词 甘肃高氡暴露地区 α径迹探测器 ^{220}Rn干扰 数据修正

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Influence and Correction of 220Rn to Radon Measurement for Radtrak Detector

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Abstract The Radtrak detector used in Gansu investigation was researched and developed. As a high permeable membrane filter for the detector, ^{220}Rn enters detector with ^{222}Rn during exposure period. Gansu cave and traditional dwellings constructed with loam bricks had a high level of ^{220}Rn, and the measurement results of ^{222}Rn were 2-3 times higher than the actual level due to the influence from ^{220}Rn. The detector was improved by decreasing air exchange rate. Improved Radtrak-R-T detector can effectively distinguish ^{222}Rn and ^{220}Rn, and measure the both simultaneously. According to the sensitivities of the detector to ^{222}Rn and ^{220}Rn as well as the ^{220}Rn concentration in the room, a correction way for the data of Gansu investigation was established， and the corrected data were compared with the actual measurement results in this area.

Key words Gansu radon exposure area _ alpha track detector _ ^{220}Rn affection _ data correction

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