

The airborne gamma-ray spectrometry data processing technologies for gamma-emitting sources search, localization and identification.

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The airborne gamma-ray spectrometry data processing methods were developed for gamma-emitting sources search, localization and identification. The experimental data set used is the following: start time, stop time, live time, flight altitude and geographical coordinates for each spectrum measured, corresponding spectrum. No prior information about the characteristics of the gamma-emitting sources and radiation background on survey territory is used. The methods developed make it feasible to calculate: • Spatial distribution of gamma-emitting Nuclide Presence Criterion (NPC) all over the territory surveyed. • Full gamma-spectrum of each radionuclide found for its identification. • Activities, coordinates and corresponding uncertainties for each local source spotted. • Activity spatial distribution of each radionuclide identified all over the territory surveyed. The experimental results are presented. The sensitivity of the methods developed is compared with other data processing methods sensitivities.

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