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**AN OVERVIEW OF THE GASEOUS RADIOACTIVE EFFLUENTS CONTROL AND RADIOACTIVITY ASSESSMENT IN THE ATMOSPHERIC AIR AT IPEN'S CAMPUS**

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The routine operation of a nuclear or radioactive installation generally involves the release of radioactive liquid and/or gaseous effluents. At the Nuclear and Energy Research Institute – IPEN there are several nuclear and radioactive facilities, developing activities in the field of nuclear energy. IPEN's Radioprotection Management has established a radioactive effluent sampling program to determine the amount of radioactive material (source term) released into the environment and to detect immediately any unplanned release above the pre-established operating limits. The IPEN Environmental Radiological Monitoring Program – ERMP evaluates the levels of radioactivity to which individuals of the public are exposed through the analysis of atmospheric samples; the main objective of an ERMP is the confirmatory radiological control, which estimates whether the assumptions made in the calculation of the dose, from the source term, are correct. The objective of the present work is to present the gaseous radioactive effluents control and the radioactivity assessment in the atmospheric air at IPEN's campus, since there were implanted in 1988 at the Laboratory of Environmental Radiometry of IPEN. In both, gaseous radioactive effluents control and radioactivity assessment in the atmospheric, cellulose and charcoal cartridge filters are analyzed by gamma spectrometry – HPGe weekly, from the IPEN's radioactive facilities, Accelerators and Cyclotron Center, IEA-R1 Research Reactor Center, Radiopharmacy Center - Building I and II and each 15 days collected from three air samplers located near the nuclear and radiation facilities of IPEN, respectively. The radionuclides determined in the majority of the samples throughout the sampling period were <sup>131</sup>I, <sup>18</sup>F and <sup>67</sup>Ga.

**P46 NUCLEAR FORENSICS: STRATEGIES AND ANALYTICAL TECHNIQUES**

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The use of environmental monitoring as a technique to identify activities related to the nuclear fuel cycle has been proposed, by international organizations, as an additional measure to the safeguards agreements in force. The elements specific for each kind of nuclear activity, or "nuclear signatures", inserted in the ecosystem by several transfer paths, can be intercepted with better or worse ability by different live organisms. Depending on the kind of signature of interest, the anthropogenic material identification and quantification require the choice of adequate biologic indicators