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# of Temporal Variations of Natural Radionuclides Beryllium-7 and Lead-212 in Surface Air in Tanay, Philippines

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Physico-chemical processes occurring in the atmosphere play an important part in the global distribution of radionuclides. In this study, radionuclide concentrations of cosmogenic and terrestrial radionuclides Beryllium-7 and Lead-212 in surface air and meteorological data collected by the CTBTO Radionuclide Monitoring Station PHP52 in Tanay, Philippines were assessed to understand the atmospheric conditions involved in radionuclide distribution in tropical climates. Daily activity concentrations of Pb-212 and Be-7 and daily meteorological data from 2012 to 2017 were retrieved and plotted against sample collection date using Microsoft Excel and evaluated for possible correlations. Surface air concentrations of Be-7 and Pb-212 were found to range from 0.00779±0.00188 to 11.2±0.116 mBq/m3 and from 1.371±0.036 to 106.6±1.075 mBq/m3, respectively, and show a consistently similar trend annually. Positive and negative correlations were observed between radionuclide concentrations and meteorological data, supporting observations from other literature that radionuclide concentrations in surface air are affected by atmospheric conditions such as temperature, humidity, and amount of precipitation, which varies depending on the season. This is further supported by the observed annual trends on radionuclide activity concentrations which follow the dry and wet season observed in tropical climates such as the Philippines.

Primary author: CRUZ, Paolo Tristan (CTBTO)

Presenter: CRUZ, Paolo Tristan (CTBTO)

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