

A23B-3211: Factors Affecting the ^7Be Concentration in Surface Air Over a Long Period of Monitoring in São Paulo, Brazil**ABSTRACT**

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Beryllium-7 ($T_{1/2} = 53.3$ days), a cosmogenic radionuclide produced continuously in the upper atmosphere by cosmic ray spallation reactions with oxygen and nitrogen can be found in different compartments of the environment and its concentration is influenced by several factors, such as, temperature, precipitation, air velocity, air masses, altitude and as well as latitude. It is quickly attached to aerosols after its formation, becoming a useful tool to study the dynamics of aerosol particles in the atmosphere. Long-term measurements of the spatial and temporal variation of ^7Be allows assessment of the influence of these factors. Data of ^7Be concentrations in rainfall, air surface, soil and sediments are very well reported in Northern Hemisphere; however these same results are limited in Southern Hemisphere. During a period of 13 years, from October 2001 to October 2014, ^7Be concentration was measured every 15 days in surface air at Instituto de Pesquisas Energéticas e Nucleares (IPEN), in the city of São Paulo, São Paulo, Brazil. IPEN campus is located approximately 10 km west from downtown of the city of São Paulo, which is situated on a plateau in Southeastern Brazil, at latitude $23^{\circ}33'58.27''\text{S}$ and longitude $46^{\circ}44'14.82''\text{W}$ and an average altitude of 760m above sea level. The climate in the area is temperate tropical with dry period in winter and rainy in summer. The concentrations of ^7Be in air filters were measured by non-destructive g-ray spectrometry using a coaxial Be-layer HPGe detector with 15% relative efficiency and live counting time ranged from 100,000s to 250,000 s. The results obtained were correlated to seasons, rainfall, temperature and sunspot number. The concentrations displayed clearly seasonal variations with higher values in spring and summer time and with the amount of precipitation.

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