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Aerosol Survey in Kathmandu, Nepal

Monitoring radioactive gases and particulates is a vital component in arms control and nonproliferation treaty verification. The International Monitoring System (IMS) established in the CTBT specifies 80 radionuclide monitoring stations located around the world. While the official stations cover vast tracts of the world, there are large sections of the globe that have not been surveyed for natural or man-made radioactivity that could make CTBT verification difficult. Nepal and Kathmandu lie in such a region, and thus should be very interesting for xenon background study. Kathmandu is the most logical place for such a study for logistical reasons. However, the local geography of the Kathmandu Basin poses a problem: past studies show parts of the basin may have air that is decoupled from regional flows for part of the diurnal cycle. This is being validated with preliminary set of aerosol measurements made at Tribhuvan University. Samples are taken with a commercial aerosol sampler and subsequently measured in low background laboratories in the U.S. Initial results of this study will be discussed.

Primary author: REGMI, Ram Prasad (National Atmospheric Resource and Environmental Research Laboratory (NARERL), Central Department of Physics, Tribhuvan University)

Presenter: REGMI, Ram Prasad (National Atmospheric Resource and Environmental Research Laboratory (NARERL), Central Department of Physics, Tribhuvan University)

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