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Mechanism of Intrusion and Channeling of Regional Air Mass over Kathmandu Valley

Numerical experimentations were performed to understand the mechanism of intrusion and channeling of regional aerosols over the Kathmandu valley with the applications of regional scale atmospheric transport model by releasing tracers inside and outside the valley. The study reveals that the regional aerosol intruding into the valley with the westerly/southwesterly wind contributes 20 to 80 percent of the total concentration over the valley during the night and daytime, respectively. The valley's air mass, particularly, over the central area of the valley appears to be significantly decoupled from the regional air mass transport processes during the nighttime whereas in the afternoon regional air mass regularly sweeps the valley floor with little day-to-day variation.

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