THE TIMES OF INDIA

Study shows 'association of cloud bursts with forest fires'

02 July 2021

Dehradun: A recent study conducted in collaboration with professors of Hemwati Nandan Bahuguna Garhwal University and IIT Kanpur indicates association of cloud bursts with forest fires. The study finds a connection between the formation of tiny particles, the size of a cloud droplet on which water vapour condenses leading to the formation of clouds and also contributing to forest fires. It measured the activation of these particles, known as cloud condensation nuclei (CCN) which is size of 80-nanometres found in the atmosphere, and studied their impact on high-altitude cloud formation and complexity of local weather phenomenon under the influence of different weather conditions in the ecologically-sensitive regions of central Himalayas. It found that the number of CCN particles peaked during forest fire incidents in the Himalayan region.

The project was funded by the Department of Science and Technology, Government of India, and was conducted at the Himalayan Cloud Observatory located at an altitude of 1.7 km in Badshahithaul, Tehri Garhwal. It is India's highest altitude located cloud observatory, established in 2018, to understand the cloud formation and its dynamics.

The observatory's principal investigator Alok Sagar Gautam shared the study findings with TOI.

"The CCNs formation and deformation occur continuously in the atmosphere. They take surrounding water vapour and form droplets at a height, which means that CCN at a particular time might be contributing all its particles to formation of rain droplets," said Gautam, who led the study and is an assistant professor in the department of physics at HNBGU.

"We have observed that whenever there is rainfall, the CCN count is low. Also, during the forest fires episode, we found CCN to be five times more than normal. The five times CCN concentration might contribute to the formation of the cloud and also, the formation of the rain droplets in the atmosphere. It won't disappear immediately, but will show its impact on the weather as well. After forest fires, if we witness excessive rainfall, it might be due to the higher CCN concentration in the atmosphere," Gautam added.

The findings are based on the data collected in 2018-19. It took three years to complete the study. The data was collected only from Uttarakhand.

Source:https://timesofindia.indiatimes.com/city/dehradun/study-shows-association-of-cloud-bursts-with-forest-fires/articleshow/84046194.cms