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MEASUREMENTS OF ATMOSPHERIC IONS AND ELECTRIC CONDUCTIVITY AT MAITRI, ANTARCTICA

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Atmospheric ions over Antarctica not only play an important role in the global electric circuit and radio wave propagation but also influence the nucleation process for the formation of aerosol particles which significantly contribute to the climate and climatic changes. Measurements of ions and conductivity are continuously made with an ion counter for the summer period of 24th Indian Scientific Expedition to Maitri, Antarctica. Average concentrations of small-, intermediate- and large- ions during this period are observed to be 336, 1772 and 8232 cm^{-3} respectively. Intermediate ion concentration generally increases during the period of solar radiation and mostly has trend in variation opposite to that of small and large ions. The variations in ion concentrations and conductivity are examined in terms of ion-attachment, coagulation, ion nucleation and ion-mediated nucleation processes.