

Indian Monsoon and North Atlantic Oscillation Signals Reflected by Cl^- and Na^+
in a Shallow Ice Core from the Dasuopu Glacier, Xixiabangma, Himalaya

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Information about past atmospheric circulation and climate change can be revealed by the chemical constituents of ice cores. Based on the analytical results of Cl^- and Na^+ concentrations in an 18.5m ice core, which contains 14 annual layers, from the Dasuopu Glacier in the central Himalaya, a significant correlation is found between Cl^- and Na^+ concentrations. This, along with the average Cl^-/Na^+ weight ratio of 1.9, indicates that moisture at the drilling site originates primarily from the ocean. In addition was a high positive correlation between the Cl^-/Na^+ ratio in the summer monsoon layers was highly and positively correlated with monsoon rainfall in the northeast India. Finally, evidence is presented that suggests the existence of a teleconnection between the Cl^- and Na^+ concentrations in this shallow ice core and the North Atlantic Oscillation.