Atmospheric monitoring observatory in Canadian Arctic

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Arctic warms at a rate twice the global average and the sea-ice declines at an unprecedented rate. While the decline in sea-ice is concurrent with the atmospheric/ocean warming, the observed variability is elusive of simple relationships. Recent studies indicate the role of the phase of precipitation on sea-ice growth and decay. There is evidence that extreme events are increasing, be it ice melting, precipitation, storms, pollution etc., in which atmosphere-Ocean -ice interact at different time and spatial scales. e.g. Atmospheric circulation transport and disperse aerosols that contribute to the observed changes by altering the radiative forcing, and may eventually lead to ice melting by changes in albedo. Sometimes unexpected consequences follow. Uncertainties in our formulations of these processes mainly arises from the paucity in observations and lead to less reliable climate projections and can take a toll on food security and human health. Therefore, there is a need to observe the ocean-atmosphere-ice system in the Arctic. We will begin by setting up atmospheric measurements in Cambridge Bay.