

An anti-dumping automatic weather station for sea ice

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With the rapid reduction of Arctic sea ice, the ice thickness is getting thinner and thinner, and the stability of sea ice is getting worse. The survival time of the traditional automatic weather station (AWS) on sea ice is getting shorter, so we designed a new AWS on sea ice to prevent dumping. The newly designed AWS integrates the battery and data collector into the bottom metal barrel, which reduces the center of gravity of the entire AWS. At the same time, the metal barrel body placed in sea ice can play a certain role in heat preservation. The buoy-like base ensures that when the sea ice melts, it can float on the sea surface and wait to refreeze. High integration reduces installation time, and the installation time only takes 1-2 hours. The newly designed AWS was successfully deployed during 13th Chinese National Arctic Research Expedition (CHINARE 2023) and has survived for 5 months.

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