

Evidence for long-range transport of atmospheric microplastic

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In these days, marine, freshwater and terrestrial pollution with microplastics (MPs) has been discussed extensively, whereas there are few reports on long-range transport of atmospheric MPs. Here, we attempted to detect atmospheric MPs by focusing on rime-ice on mountain site located in the free troposphere. MPs were identified by Fourier transform infrared imaging in all samples. The MPs concentrations of rime-ice was significantly higher ($10\sim 20 \times 10^{-3}$ N liter⁻¹) than snow on same mountain (1×10^{-3} N liter⁻¹). The major polymer which detected was polyethylene. Most of particles were in the smaller size below 50mm. Furthermore, from the results of the back trajectory analysis, our data emphasize that atmospheric transport and deposition can be notable pathways for MPs.

キーワード：樹氷、マイクロプラスチック、長距離輸送

Keywords: rime-ice, microplastic, long-range transport