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Modelling Wet Deposition to Improve Nuclear-Test-Ban Monitoring

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Monitoring compliance with the Comprehensive Nuclear-Test-Ban Treaty requires, among other things, accurate modelling of the transport of radionuclides in the atmosphere. Crucial to atmospheric transport models (ATMs) when dealing with radioactive particulates are several removal processes, such as dry and wet deposition. Wet deposition in particular plays an often dominant role in the total removal of radioactive particulates from the atmosphere, especially on CTBT-relevant timescales. Despite this, the simulation of wet deposition still remains difficult in large part due to uncertainties in the parameterization schemes used in state of the art ATMs. In this presentation, we show how better knowledge of wet deposition can improve nuclear-test-ban monitoring. For this, we perform atmospheric transport calculations with FLEXPART and also incorporate data from CTBTO's International Monitoring System.

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Promotional text

This work aims to improve the monitoring of the nuclear-test-ban, by using innovative methods regarding the use of wet deposition in the context of atmospheric transport modelling of particulates.

Oral preference format

in-person

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