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A numerical simulation of an Asian dust (Hwangsa) event observed in Korea on 10-12 March 2004 using the modified ADAM model

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A moderate Asian dust (Hwangsa) event was observed in Korea for the period of 10-12 March 2004. This event has been simulated using the meteorological outputs of MM5 and the modified Asian Dust Aerosol Model (ADAM). The ADAM model developed by Park and In (2003) and Park and Lee (2004) has been modified using the observed data obtained from the monitoring tower located at Duolun in Inner Mongolia. The Modification has been done by comparing modeled and monitored meteorological parameters including the relative humidity, soil surface temperature, surface wind speed and the surface vegetation conditions that are used in dust emission conditions in the ADAM model. The modified ADAM model is able to simulate more accurately observed dust concentration, starting and ending times and the dust peak appearing time in South Korea, suggesting the usefulness of the modified ADAM model to forecast the Asian dust (Hwangsa) event in Korea.

References

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