Aeolian dust event in Korea observed by an EZ Lidar in the frame of global lidar networks.

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Duststorms and sandstorms regularly devastate Northeast Asia and cause considerable damage to transportation system and public health; further, these events are conceived to be one of the very important indices for estimating the global warming and desertification. Previously, yellow sand events were considered natural phenomena that originate in deserts and arid areas. However, the greater scale and frequency of these events in recent years are considered to be the result of human activities such as overgrazing and over-cultivation. Japan, Korea, Cina and Mongolia are directly concerned to prevent and control these storms and have been able to some extent to provide forecasts and early warnings. In this framework, to improve the accuracy of forecasting , a compact and rugged eye safe lidar, the EZ LIDAR^{TM}, developed together by Laboratoire des Sciences du Climat et l'Environnement (LSCE) (CEA–CNRS) and LEOSPHERE (France) to study and investigate structural and optical properties of clouds and aerosols, thanks to the strong know-how of CEA and CNRS in the field of air quality measurements and cloud observation and analysis, was deployed in Seoul, Korea in order to detect and study yellow sand events, thanks to its depolarization channel and scan capabilities. The preliminary results, showed in this paper, of this measurement campaign put in evidence that EZ Lidar, for its capabilities of operating unattended day and night under each atmospheric condition, is mature to be deployed in a global network to study long-range transport, crucial in the forecasting model.