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# The april 18, 2016 Popocatepetl eruption: dispersion modelling and effects

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Present activity at Popocatepetl Volcano (19°02'N, 98°62'W) is characterized by dome construction and destruction. Recently this volcano has shown an increase in explosive activity associated with ash fall and the construction-destruction of another dome. The April 18, 2016 Popocatepetl eruption produced ash fall in an area with more than 2 million people; the cities of Puebla and Cholula to the east of the volcano had ~3mm ash fall. We validated the FALL3D ash dispersal model by comparing model results with ground measurements during eruption. We ran the model at high spatial resolution using an input of the hourly-averaged observed height of the eruption column and the total reconstructed grain size distribution. We used the wind data from the Air Quality Forecast and grain size of the ash collected in the field. The April 18, 2016 event lasted more than 3 hours with an eruptive column of 3km above the vent (5 426 masl). The cloud distributed ash mainly to the East-Northeast and distal ash fall was recorded up to Veracruz on the Coast of the Gulf of Mexico. The immediate effects observed in the local population were psychological stress and respiratory, eye and skin irritation and headaches. Volcanic ash has been the most frequent hazard causing air pollution and reduced visibility.