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## Lava flow hazard of the 2018 Etna eruption: What happened and what could happen

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On 24 December 2018 a flank eruption started on Etna from an eruptive fissure opened on the eastern side of the New Southeast Crater (NCSE) at about 3,100 m asl, which in few minutes, propagated to the south-east, overcoming the edge of the western wall of the Valle del Bove (VdB), reaching an altitude of 2,400 m asl and a total length of about 2 km. The eruption, which lasted only three days, produced lava flows from different vents along the eruptive fissure that reached a distance of about 4.2 km and covered an area of about 1 km<sup>2</sup>. The satellite monitoring of the 2018 Etna eruption was performed using the HOTSAT system using mid and thermal infrared data acquired by the Spinning Enhanced Visible and InfraRed Imager (SEVIRI), which provided minimum and maximum estimates for the lava thermal flux, the effusion rate and the lava volume. The SEVIRI-derived effusion rate estimates were used as input of the MAGFLOW model to simulate the actual lava flow field, obtaining a very good fit. We also simulated different eruptive scenarios assuming the lava emission wouldn't run out in only three days to forecast if, when and how the lava flow could reach the inhabited areas, causing possible significant damage.