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The Ålesund slide, March 2008: Lidar analysis of an urban human-induced rockslide

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On March 26 2008, a 2400 m3 rock block slid from an excavated slope on a six floors house in the city of Aalesund (Western coast of Norway). The whole house was displaced horizontally on its basement on about 6 meters and the two lower floors of the building collapsed. Five persons died during the event. Almost 500 inhabitants living in the surroundings had to be evacuated for 6 to 8 days because of a gas leakage.
The site has been scanned three times with a terrestrial lidar. In the first dataset, made a couple of days after the event, the block and the house are present. In the second dataset, acquired about 3 months later, the house had been removed but most of the sliding block is still in place. The last scan, made six months after the events, shows very well the sliding surface, as the block had been removed too. These three scans completed by field measurement and observations have been used: 1) to characterize the geometry and volume of the block, 2) to determine the displacement vector, 3) to perform a analysis of discontinuities and some kinematics tests, 4) to estimate the roughness and the waviness of the sliding surface.