



Precipitation and slide activity in south-eastern Norway autumn 2000

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In autumn 2000 high amounts of precipitation caused a large number of land slides in south-eastern Norway. The precipitation recorded at meteorological stations reached more than 400 % of the normal monthly values in November. Additionally to the precipitation, groundwater monitoring showed unusual high levels. High air temperatures in the mountains caused the precipitation to fall as rain instead of snow causing additional runoff in the catchments. The Norwegian Geotechnical Institute (NGI) was involved in the evaluation of numerous slides in the counties effected by the slide activity. All slides that were documented in this work were collected in a database. This database serves as start point for an analysis of the connection between slide activity and precipitation. The analysis showed that there is a high variability of the observed precipitation just a few days before the slide. This variability decreases significantly around 50 days prior to the slides when the results stabilize around 400 % of normal precipitation in a 50 days period. Relation of these results to long time observations gives an estimate of return periods for the precipitation events. The analysis shows that the 53 days accumulated precipitation had the highest return period of 132 years. This gives an indication that the high landslide activity in autumn 2000 in south-eastern Norway was caused by a long term infiltration of large amounts of precipitation rather than high rainfall intensities in short periods.