

Abstract

The thesis „The mountain sagging of Wabenspitze near Zederhaus“ is a contribution to the understanding of mountain sagging in general and focuses on the area of Wabenspitze in particular. The area is located in the eastern part of the tauern window which is well known for its mountain sagging. Here, the dipping of schist planes directed towards the valley serves as a basis for slow and deep-seated movements. Since, however, schistosity dips steeper than the slope itself, this observation is not sufficient to fully explain the movements from an engineering-geological perspective. It turns out that the movements do not exclusively occur along discontinuities and the resulting cuttings but that the geometry of the joint system implies movements which result in a new fracturing zone.

A case study on slope stability is presented which allows to estimate the direction of the new fracturing zone. Specifically, the zone dips towards the valley at approximately 15° , where striking is parallel to that of valley and slope. This estimate is based on an empirical analysis of the rock mechanical parameters and the anisotropical behaviour of rock mass occurring in the area of Wabenspitze. The goal of the case study was to identify that specific combination of existing joint system and new arising fracturing zone which provides the minimum of slope stability.

In addition to the main movement „mountain sagging Wabenspitze“, several other movements could be observed and are analyzed in this thesis. Examples are „mountain splitting Wabenspitze“, „debris flow Wabenspitze“, and secondary movements in soils. Based on the findings, a spatial and temporal model of all movements has been developed for the whole area of Wabenspitze and is documented in various maps, profiles, and sketches.