

The Extended Column Test: Test Effectiveness, Spatial Variability, and Comparison with the Propagation Saw Test

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The Extended Column Test (ECT) is a new stability test that aims to assess the fracture propagation potential across a 90 cm wide isolated column. Initial results with a dataset consisting of over 300 tests collected by one observer demonstrated the ECT's effectiveness for differentiating between stable and unstable slopes. Further, we have received positive feedback on the test from a world-wide network of observers. This paper: 1) presents new recording standards for the test, 2) uses the SnowPilot dataset to further assess the effectiveness of the test by analyzing over 300 tests performed by several observers in different snow climates, 3) looks at the spatial variability of ECT results from several test grids, and 4) compares side-by-side results between the ECT and the Propagation Saw Test on stable and unstable slopes. Our results indicate that the ECT is an effective stability test, with a false stability ratio generally less than other standard snow stability tests. Results are sometimes quite spatially uniform, though occasionally slopes may exhibit variable ECT results. In comparison to the PST, our data suggest the ECT has a lower false stability rate, but a higher false instability rate. No test is perfect and all tests must be used in conjunction with additional data, but our results show the ECT is valuable additional tool for assessing snow stability.