

An Internet Based Snow Stability Toolkit for the Temporal and Spatial Display of Meteorological, Snow Stability, and Avalanche Related Data for Forecasters and Backcountry Users.

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Abstract

Avalanche forecast offices utilize meteorological data, snow stability, and avalanche observations from a wide variety of sources. These sources provide data with varying structure, format, and frequency. As a result, it is difficult for forecasters and backcountry users to capture an integrated temporal and spatial picture of all available data. To facilitate an efficient quantitative based snow stability evaluation an integrated tool is needed to capture, organize, and display these types of data.

We have developed a graphical "Snow Stability Toolkit" that is lightweight and fast loading. The toolkit captures, processes, and integrates avalanche related data into a "one stop shopping" GUI (graphical user interface). The toolkit plots the location of observations and meteorological stations on either a slope-aspect diagram or on a terrain map. Data associated with each location is accessed by clicking on the associated symbol and is displayed in a separate toolkit view port. A variety of data types may be displayed including text, emails, photos, or time-series graphs. Any data normally published on an html web page can be integrated into the toolkit.

The benefits of the "Snow Stability Toolkit" are 4-fold: 1) Integrates and standardizes a wide variety of data, 2) Provides a complete integrated picture of parameters that influence snow stability, 3) Educates backcountry users by presenting easy to use real data in combination with a daily advisory on the internet, and 4) Offers a flexible and fast loading interface on the internet through the use of XML (Extensible Markup Language) and SVG (Scalable Vector Graphics).