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Comparison of avalanche-velocity measurements by means of continuous wave radar, pulsed Doppler radar and optical methods

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Velocities of mixed flowing-powder avalanche have been measured by means of pulsed Doppler radar and by continuous wave radar at the full scale avalanche test site Vallée de la Sionne.

From the Radar data, we derive velocities of the flowing part and of the powder part of the avalanche.

The results obtained by the two different Radar measurement techniques are compared and also are checked against the velocity data obtained by opto-electronic velocity sensors installed at different heights on the 20m high mast in the avalanche track.

We want to demonstrate that the measurements are consistent and discuss how information about the avalanche structure can be derived from the measurements.