What is the dMSLP ?

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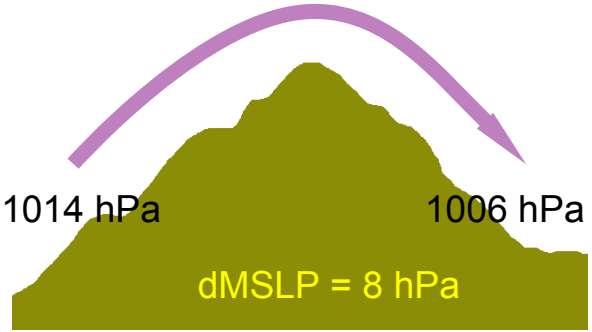
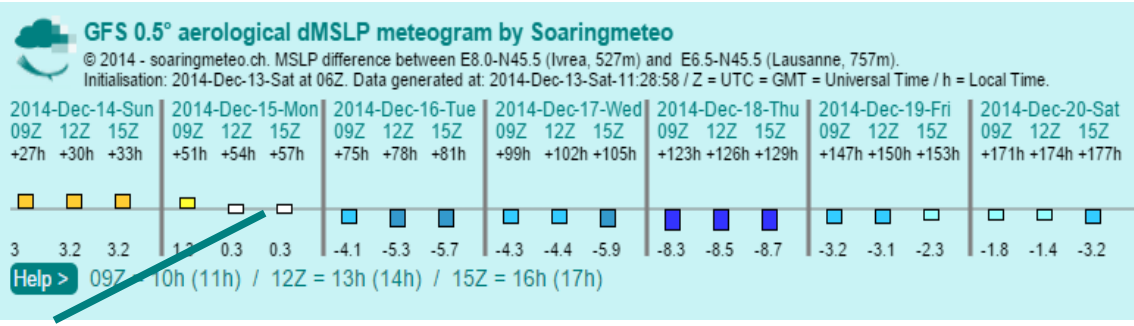
The difference of mean sea level pressure (**dMSLP**) between two GFS grid points from both sides of a mountain range can be important to predict the risk of Foehn (chinook) wind.



Greater the dMSLP, greater is the risk of Foehn. This wind can be dangerous for soaring pilots particularly for paragliding pilots.

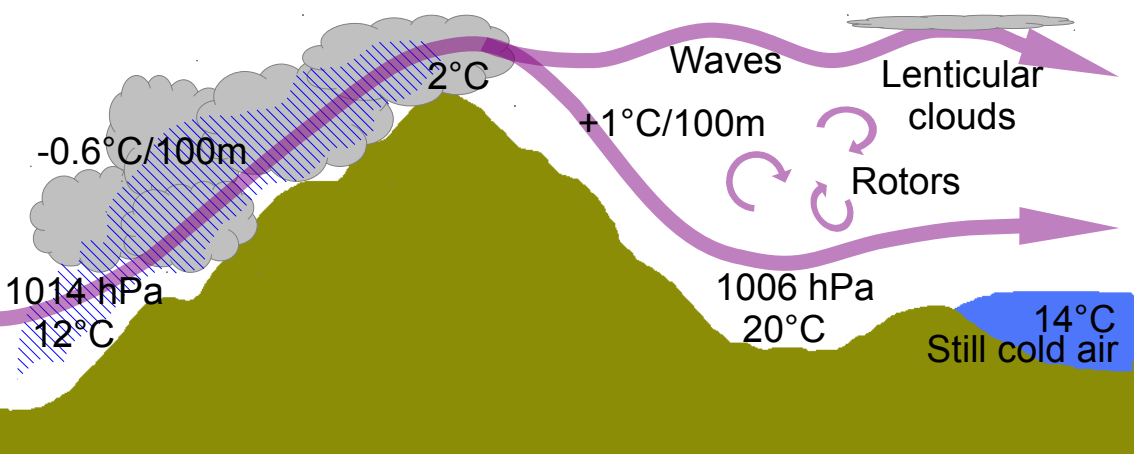
A dMSLP of over 3 - 5 hPa can contribute to Foehn process. But assessment of the dMSLP is not sufficient. The evaluation of winds aloft (direction and speed) is also important. For example strong south or south-west winds across the Alps can lead to southern Foehn.



Here are the sequence of the colour and size coded dMSLP icons and just below the sequence of the numerical value of dMSLP in hectopascal (hPa).

< -10 -7 -5 -3 -1 1 3 5 7 10 <

If the first grid point (e.g. Ivrea, southern Alps) has greater MSLP than the second one (e.g. Lausanne, northern Alps), dMSLP will be positive (yellow-red colours), and inversely with negative values (blue). Small dMSLP leads to white and small icon.



Description of the Foehn wind process: The atmosphere on the windward side (relative high atmospheric pressure) of a mountain range is often wet and cold. On this side, the air ascent from orographic forcing leads to saturation of water vapor and to precipitations. The air cools according to the wet pseudo-adiabatic lapse rate (-0.6°C/100m). At the top, the atmosphere has lost its moisture. The descending dry air at the leeward heats up intensely according to the dry adiabatic lapse rate (+1°C/100m). The atmosphere there is clear and warm but subject to strong and turbulent winds.

Typical winds map of strong southern Foehn in Switzerland. Foehn is frequent in Winter, Fall and Spring and less frequent in Summer.

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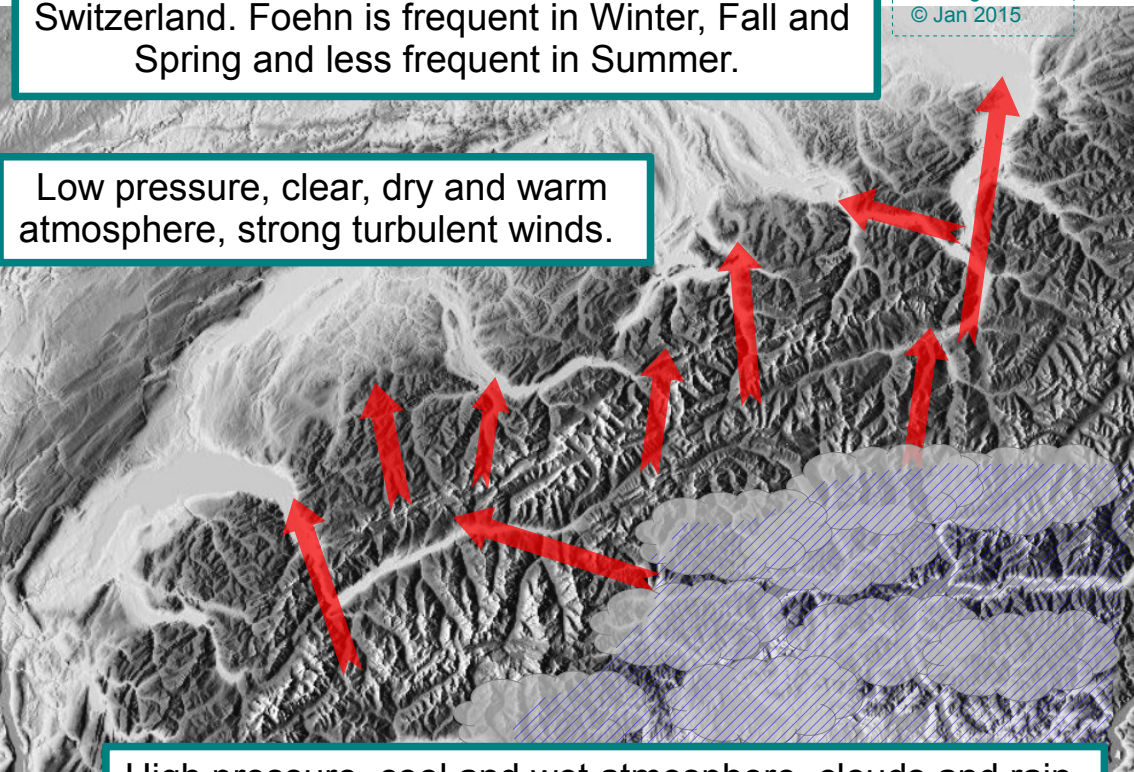
Low pressure, clear, dry and warm atmosphere, strong turbulent winds.



High pressure, cool and wet atmosphere, clouds and rain.

Typical winds map of strong northern Foehn in Switzerland.

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