Dendrite Generator

Production of natural snow.

or

Powder snow for everyone.

A (possible) revolution in artificial snow production

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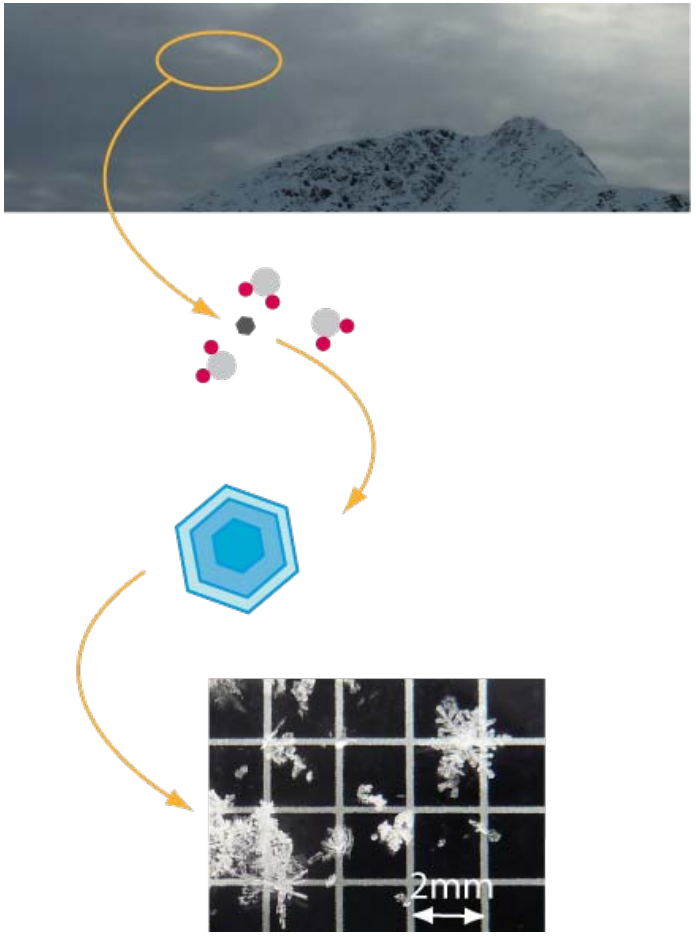
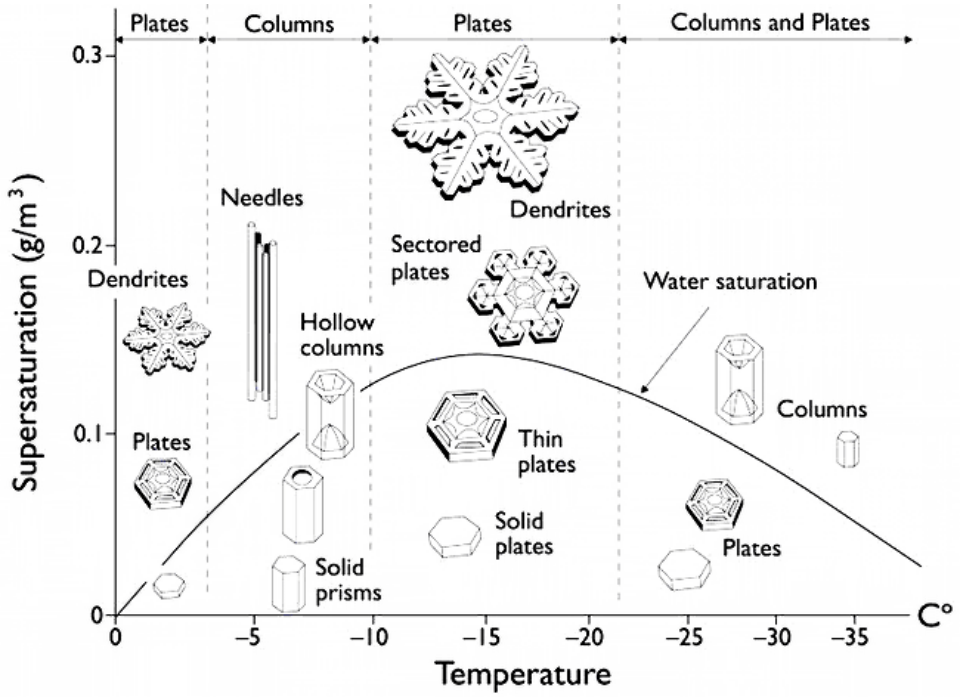
The formation of snow in the atmosphere



- ❄ Starting conditions: high humidity, low temperatures
- ❄ Formation of an ice-nucleus based on an aerosol
- ❄ Growth of a hexagonal prism
- ❄ Further growth to complex crystals as a function of super-saturation and temperature.



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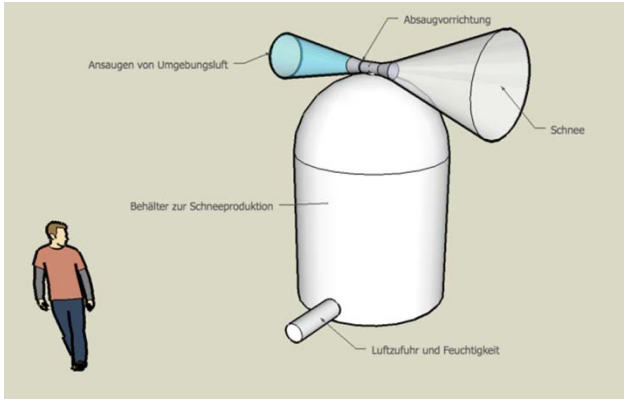
Snow-Guns and the Dendrite Generator



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Comparison of operating mode

Conventional Snow-Gun:

Begin ---------- End

Water -- atomization -- low temperature -- frozen water droplets (snow)

Dendrite Generator: (atomized water is needed)

Begin ---------- End

Ice nuclei -- moisture -- growth of snow crystals -- snow („real“ snow crystals)

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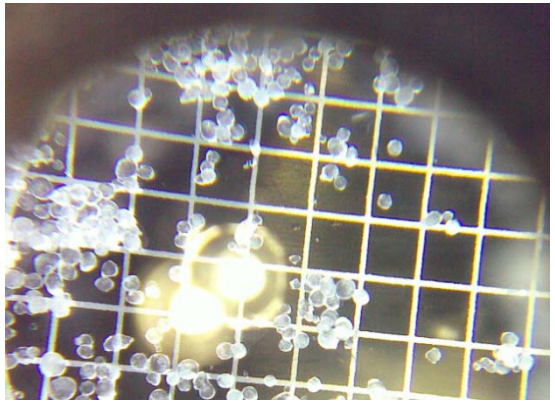
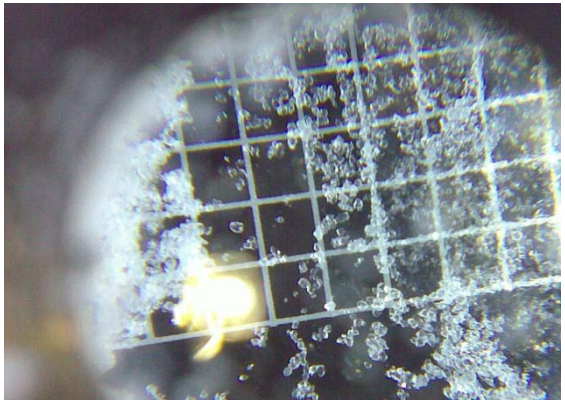
Status quo

artificial snow production

* very important for winter tourism — ca. 70% at season start
* high energy consumption — ca. 5kWh/m^3 snow
* snow with high density — 400-500 kg/m^3
* unfavourable for flora and fauna — e.g. permeability of air
* (low) acceptance of ski-tourists — hard and icy slopes



lance, 2mm grid



Propeller, 2mm grid

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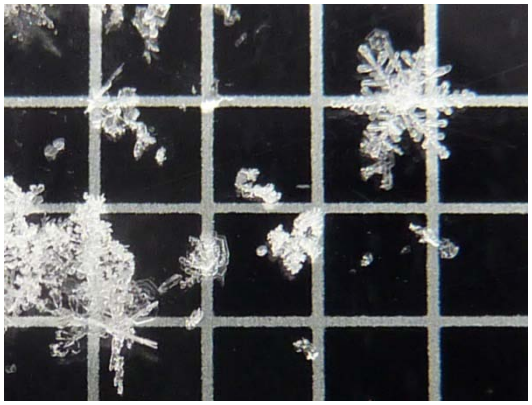
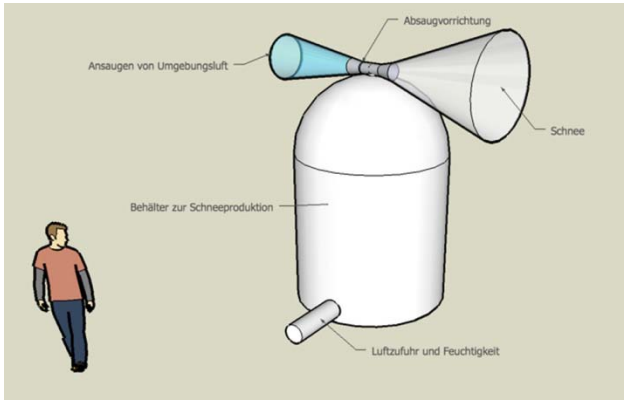
natural snow production

* snow with low density — max. 200kg/m^3
* more snow / m^3 water — ratio ca. 1:5
* low energy consumption — reduction 40-90%
* higher acceptance of ski tourists — smooth, „fresh“ slopes



2mm grid



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Benefits

snow density < 200kg/m^3 (konv. 400 - 500kg/m^3)

reduction of energy consumption 40 - 90% per m^3

high-quality snow production even under ‘extreme’ conditions (-1°C > T > -5°C)

higher acceptance: tourism, politics and environment

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Outlook

Start of project February 1st 2010

02/2010 - 01/2011: Development of lab-protoype (Phase I)

Further development in collaboration with Universities (Technology transfer institute)

starting from 02/2011: Phase II - prototype development till marketability (2013)


Thank you for
your attention!

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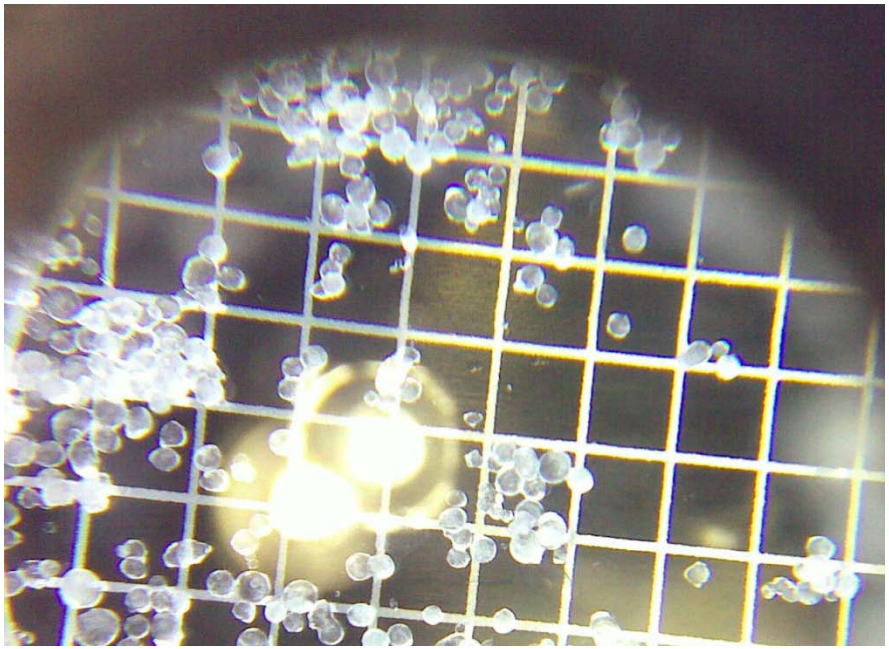
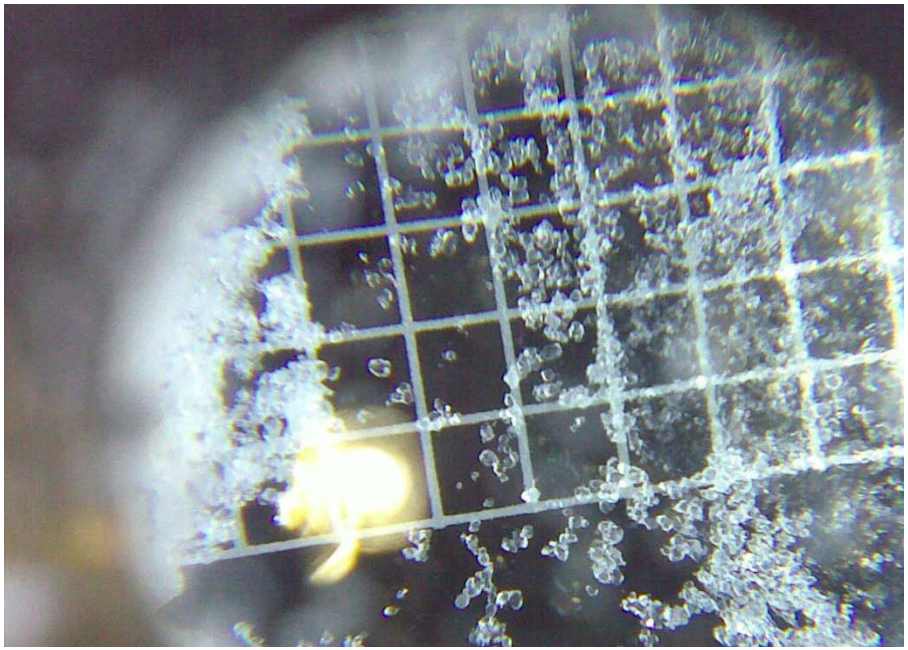
Add-ons I



lance, 2mm grid



Propeller, 2mm grid