

What kind of forecast products are needed by the road winter maintenance organizations? (Chairman Albert Mathis CH)

Summary of Workshop 1; SIRWEC Bingen D, June 18th 2004

Dangerous Situations for winter maintenance

Frontal clearance	Very important: wet roads freeze
Cold front	Rain turning to snow
Warm front	Freezing rain
Fog	Visibility sensor important
High snow accumulation	Snow drifting (wind, temperatures) avalanches
Precipitation	Bridges, high altitude roads

What kind of weather information needed for this situations?

Frontal clearance

Wx Radar, Satellite, Water Vapour Channel (rapid scan), RWIS observations

Parameters: RST; Diff.T-Td; cloud Diff.T-RST; wind, road state (wet,dry), timing
(T= air temp.; Td= dew point temp.; RST= road surface temp.)

Cold/warm front

Meteogram per station ; Wx Radar

Parameters: T gradient, rate of cooling, amount and form of precipitation; wind changes; duration of precipitation, structure of rain bands; T, Td, RST

Water Vapour Channel (rapid scan) gives clear image of post frontal low Td area. In this zones it will be more rapid cooling (e.g. in frontal clearance)

Fog

Boundary Layer Model

Parameters: Diff. T-Td; wind; vertical profile of T, Td; visibility; cloud (low, medium, high)

High snow accumulation

Wx Radar network; met. stations

Parameters: Intensity of snowfall; wind; T, Td; topography

Output: snow depth (mm); accumulation maps 2h, 6h

Precipitation

Wx Radar, RWIS, present weather detector

Parameters: amount, intensity, duration and type of precipitation; RWIS data from neighbours

Output: maps of precipitation intensity; maps of snow accumulation

Summary

Products	Frontal clearance	Cold/warm front	Fog	Precipitation	Snow accumulation
Wx Radar	x	x		x	x
RWIS	x			x	x
Present Wx				x	x
Boundary Layer Model			x		
Water Vapour Channel	x				
Meteogram		x			

August 6th 2004, Urs Keller