Preparation and maintenance of pistes
A review of state-of-the-art knowledge & methods

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Introduction
We present the new handbook of piste preparation, which is the only source of information that provides ski resort operators with methods and knowledge for quality assurance of the central product of a winter sports destination - the ski slopes, cross-country ski runs and snow parks. The new edition contains a completely new chapter, which also makes the layman understand the physical processes and the resulting properties of the snow. For the first time, current snow production technologies are compared. The completely revised book bridges the gap between research findings and day-to-day practical application on ski slopes. It provides important know-how to meet the increasing demands on snow sports offers, while the climatological conditions are becoming increasingly unfavorable.

Science of Snow
- Basic structural properties
- Thermal properties
- Snow processes
- Mechanical properties
- Formation of natural snow
- Machine-made snow

Meteorological factors affecting snow
- Atmosphere
- Thermal balance on the snow surface

Preparing and maintaining ski pistes
- The optimal ski piste
- Principles of snow consolidation
- Snow preparation in accordance with snow and weather conditions
- Machines and their optimal use

Preparing and maintaining a ski racing track
- Goals of racing track preparations
- Preparatory work
- Watering a ski racing track
- Chemical snow hardening
- Snow clearing

Preparing and maintaining cross country ski tracks
- Goals of racing track preparations
- Preparatory work
- Watering a ski racing track
- Chemical snow hardening
- Snow clearing

Constructing and maintaining a snow park
- Freestyle Parks
- Cross tracks
- Halfpipes

Snow management
- Standardized workflows and management system
- Technical snow and micro climate
- Piste preparation
- Snowmaking
- Further measures
- Climate change and snow guarantee

Measuring methods and equipment
- Snow measurements
- Meteorological parameters
- Snow cover models
- Snowmaking app
- Tools for snow park constructions