

Ecological runway management

Source:

Standortagentur Tirol

Section:

Ecological runway management

Institutions: Mayrhofner Bergbahnen, Technische Universität Wien, Landesumweltanwalt Tirol

Location: Tyrol, Austria

Description:

Under the direction of the Tirol agency (Cluster Renewable Energies, Information Technologies and Mechatronics Tyrol), experts, researchers, innovators and ski operators have joined forces to ensure the success of the winter tourism marked by ski tourism. The platform mainly deals with the fields of action nature, man (management) and technology. In the medium term, innovations are to be triggered, which will be effective in the winter sports tourism industry and support further development. In this way workplace effects are triggered in two areas: in the industry itself as well as in the manufacturers of new products and services. Basic research on the production of technical snow, scientifically founded innovations, the development of new products and processes, software development, interface management as well as the lifecycle analysis (ecology / economy) are specific activities of the platform technologies. It ensures the transfer of know-how, the integration of relevant networks and the establishment of sound decision-making bases. Mission In order to achieve the objectives, methods and activities are coordinated transparently within the platform:

- Specific market requirements from business, politics and research are addressed to the neutral and coordinating role of cluster management and answered in the expert network (economic focus).
- New research questions are formulated, formulated and researched (scientific focus) in close network exchanges and neighboring circles.
- Cooperative product and service developments are becoming visible results from innovative combinations of technology, management and nature.
- The interdisciplinary composition and dynamic communication in the network make it possible to discover hidden questions at all and to search for solutions. The need for ecological ski management

The resources of water and energy are, besides land, the most valuable assets for the management of the tourist

area. They are therefore the focus of the attention of the tourism industry, especially since they have a tremendous importance for the sustainably successful company management. With a know-how which is widely used in the Tyrol, the aim is to research, manufacture and apply the competences (technology, information / communication technology and management) necessary for this purpose, as well as cooperation beyond national boundaries.

With the new Schnei technologies, there is a lot going on at the moment. The "artificial cloud" already presented in MM 4 by DI Michael Bacher, GF of the company "Neuschnee" has already aroused great media attention in its test season in Hochgurgl. For the first time the Snowy Snowy Snowman was presented by the creative engineer Frank Wille from Pfunds. It uses a completely different kind of mixture of water and air, which is blown with supersonic through the nozzle and with a plus of 3 degrees and 78% humidity still allows dry (!) Snow. In Serfaus, the first tests were made, in Mayrhofen more, now the product is almost market-ready. For 2015/16, 10 demonstration machines will be delivered. According to Will, the snowmaker runs up to 0 ° C wet bulb temperature - so if all conventional snowmaking machines fit well, and since the snow is dry, you do not have to drain the water, but you can continue to use it. Furthermore, the "Plasma Snow" NIVOSUS was presented by MCI researcher Thomas Obholzer and Ronald Stärz. A significantly higher efficiency is achieved at a lower cost. The secret of success is nucleation. This method does not require any nucleation nuclei, like the conventional snowmakers with their nucleator nozzles, to freeze water. In this case the water droplets are conveyed by an oxygen plasma of charged and neutral particles! The former trigger nucleation. In addition, the evaporation rate of a water drop is up to four times faster - the cooling process is faster. In conventional cutting systems, a liquid phase is still present during the production in the limit temperature range in the ice crystal. This often turns out to be a problem. NIVOSUS was used on a SUFAG lance with 2 heads at -1.5 ° C FKT, an area where this lance normally switches off and on normally ... The comparison result with this add-on technology was impressive: the conventional lance head produced wet snow 3 cm high, the NIVOSUS treated dry snow with 6 cm height! The system therefore helps with early snowmaking and energy balance

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