



Snow loads and changing climate - new risks?

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Heavy snowfalls in Bavaria (Germany) caused a series of damages of infrastructure with partly catastrophic impacts in January/February 2006. In Bad Reichenhall, e.g., on January 2nd the roof of the ice pavillon collapsed and killed 15 people - 34 were injured. Indeed, today some serious deficiencies in the construction of the roof are made responsible for the disaster; the trigger, however, was the actual snow load on the roof. The antecedent evolution of the snow cover together with the given meteorological situation lead to a force the construction could not cope with at that time. The question comes up whether such snow load situations will develop more frequently or more intensely, or if a regional pattern of their occurrence probability will take shape. This paper shows which meteorological conditions were observed before and during the catastrophe in January 2006, and which basics are relevant for the snow cover evolution and its respective loads. The state of the art of current climate change research allows a look into the future to estimate the potential risk of more frequent or intense snow loads. Future climate simulations predict rising temperatures and more winter precipitation. The consequences to cope with for the regional snow cover and the loads to be expected result from the complex interactions of these two factors. As a future course of action, an operational warning system for the region of Bavaria is outlined to predict the development of snow loads for a 3-day-horizon: therefore, prognostic climate simulations are coupled with a distributed snow cover model (both operational at the German Weather Service), and coupled with local snow pillow measurements of snow loads on representative roofs.