Dynamical statistical forecast of Alpine snow amounts for the safety of people, infrastructure and transport

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For the Austrian state of Tyrol snow is both – "white gold" for winter tourism and a danger to people and infrastructure. Avalanche warning services, road maintenance departments, and authorities need reliable and accurate forecasts of new snow to perform the proper procedures to keep people and infrastructure safe and the traffic flowing as smoothly as possible. In this study advanced spatio-temporal regression models are used to combine snow height and precipitation observations, high-resolution terrain information, and numerical weather predictions to create high-resolution forecasts of new snow in Tyrol. These forecasts are compared to state-of-the-art spatial and single location forecasts.