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Glacial bed forms at Findelengletscher, Zermatt, Switzerland

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The current glacier meltdown is increasingly unveiling the glacial bed forms produced by the most recent glacial advance of the 1980ies, such as flutes, mega-flutes and drumlins. This is a challenging opportunity to study these morphologies and the processes involved in their formation; in addition, our observation suggests a new question to be answered: why can't any of these features in units belonging to previous glacial advances be recognised? Similar forms could either have been washed away already, or never been built during LGM and since. The most beautiful and evident of the forms under investigation are the flutes and mega-flutes: elongated streamlined ridges of sediments either starting from an obstacle or just sticking out of the basal lodgement till. The way flutes have been initiated and then evolve is still partially unknown, due to their variety in shape, size and material.
The glacial forefield at Findelengletscher under investigation deglaciated over the past two years, offers a well-preserved variety of such forms at all scales. Their material (basal lodgement till) is homogeneous and consistent all over the site, as well as their fabric. In addition, this silty sand shows a low plasticity index. These preliminary results support the idea that flutes build up very quickly during repeated seasonal advances in thin ice conditions with retreating trend (Coray, 2007), and that they could be equally easily and rapidly washed away.

References:
Coray Sandro (2007): Genesis and significance of flutes at Findelengletscher, Valais, Switzerland, Institute of Geological Sciences, University of Bern.