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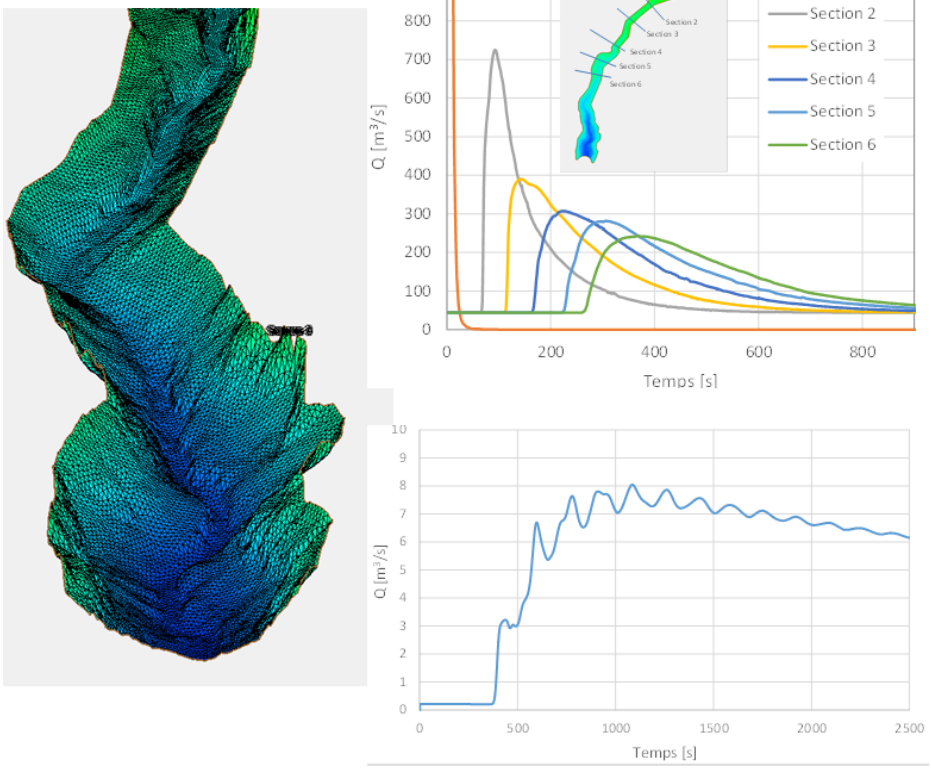
Hydraulic study of a natural dam break upstream of an existing dam in Valais



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The climate changes accelerate the melting of glaciers in the Alps. Retreat of glaciers causes releasing steep mountain sides that may in turn leads to major landslides and/or rock falls. These might block rivers or creeks in narrow valleys.

A large steep mountain side released at Upstream of a dam in Valais Province, Switzerland, due to glacier retreat. The creek may be blocked through the landslide of the mountain side and an artificial lake may form behind the blockage (natural dam). The blockage may break and a flood wave may arise and propagate towards the downstream dam. The development of the flood wave and its effect on the downstream dam is calculated using a detailed 2D shallow water model for different breakage scenarios.