

## **Characteristics and frequency of large submarine landslides at the western tip of the Gulf of Corinth**

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Coastal and submarine landslides are frequent at the western tip of the Gulf, where small to medium failure events (106-107 m<sup>3</sup>) occur on average every 30-50 years. These landslides trigger tsunamis and induce erosion on the coasts by upslope retrogression. This consequently represents a significant hazard. We use here a dense grid of high-resolution seismic profiles to realize an inventory of the large mass transport deposits (MTDs) that result from these submarine landslides. In some locations, MTDs that accumulated during the last 130 ka, were mapped. Six large mass wasting events are identified, and their associated deposits locally represents 30% of the sedimentation since 130 ka in the main western Basin. In the case of large MTDs (up to almost 1 km<sup>3</sup> for the largest), a simultaneous triggering of different slope failures is inferred and suggests an earthquake triggering. However, it is proposed that their temporal distribution results from pre-conditioning factors, rather than from the recurrence of possible triggers. Two main pre-conditioning factors are inferred: (1) the recharging time of slopes, which has varied because the sedimentation rate increased during specific periods; and (2) dramatic changes in water depth and water circulation that occurred 10-12 ka ago, during the last post-glacial transgression. Finally, it is likely that these sliding events have triggered large tsunami waves in the whole Gulf of Corinth, possibly larger than those reported in historical sources.