



Assessing the stability conditions of the Cap de Creus Canyon, Gulf of Lions, using limit equilibrium methods.

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A portion of the Cap de Creus has been selected for a detailed analysis of slope instability. The selected area is located on the north side of the Canyon between water depth ranging between 280m and 750m. This sector presents evidences of landsliding which has led to the accumulation of debris at the toe of the slope. The headwall escarpment is about 30m high at a slope of 27° whereas the failure plane is inclined at about 20° and is about 450m wide. The slope of the debris where sample PCFL-665 was taken is at about 5° and reduces to about 1° near the thalweg. Results of various scenarios describing the canyon walls will be presented in order to assess the stability condition using limit equilibrium methods. A particular attention will be paid to conditions assuming that the factor of safety is close to 1 so that other parameters, such as excess pore pressure and erosion can be estimated. We will also consider the impact of sediment accumulation at the top as a result of sediment shelf transport. Finally, we are also considering the impact of a more or less cemented sandy hard layer on the top and its relation to slope angles and stability. The geotechnical parameters for the clayey sediments involved in the instability have been determined from laboratory testing obtained from samples taken in 2004.