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**Experimental Gravity Currents Propagating Downslope Over A Synthetic Topography** ANDREA BURGOS CUEVAS, ANGEL RUIZ-ANGULO, CARLOS PALACIOS-MORALES, Univ Nacl Autonoma de Mexico — Lock-release gravity currents are studied experimentally in order to investigate their dynamics and the mixing process between them and the ambient fluid. We produced these currents in a laboratory tank and allow them to propagate downslope first in a flat slope and then in a rough one with a synthetic topography. This topography is similar to the one of a side of a mountain near Mexico's valley. Our aim is to investigate the dynamics of gravity currents as similar as possible to the mountain breezes that can develop around this valley. To the best of our knowledge, there are few experimental investigations that take into account the roughness of the slope. For each experiment, we obtain the instantaneous velocity fields using the standard piv technique. From the velocity fields, we estimate the entrainment coefficient time series. We found that this coefficient depends on the roughness of the surface where the current propagates. Besides, pressure time series were obtained in synthetic stations along the rough profile. These series showed a very clear signal of the gravity current propagating along the slope.

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