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**Velocity field within a *stagnant zone* in a granular flow** ENRIQUE SANDOVAL, ROBERTO ZENIT, Universidad Nacional Autonoma de Mexico — It is known that in granular flows stagnant zones may appear. It has been usually thought that these regions remain immobile; however creep-like motion has been observed. The objective of this study is to measure the velocity field within the stagnant zone. Are the flow properties of such zone determined by the material (particle size, maximum solid fraction, roughness) or the flow (velocity)? We hope to answer this question. A gravity-driven granular flow was produced with a vertical channel filled with glass beads. The mean speed was controlled with discharge hopper. A solid plate is positioned in the center of the chute; its interaction with the flow produces a stagnant region in its upstream side. Using an image correlation technique (normally used in the PIV method), velocity profiles were measured for different angles, mean discharge velocities and plate sizes. For the case in which plate is perpendicular to flow, the velocity was found to decay exponentially within stagnant region. The exponential decay ratio is proportional to the distance from the plate. In this talk the nature of this behavior and its implications for granular media rheology will be discussed.

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