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**Homogeneous linear shear of a two dimensional granular system**

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— Using a novel shear device, we experimentally study the response of dry granular materials to quasi-static shear. Our apparatus is capable of creating linear strain profiles over the entire width of the two dimensional shear cell. By eliminating the usual tendency of granular shear to localize in non-uniform shear bands, we can study the poorly understood nature of granular flows in great detail. We employ photo elastic particles, fluorescent labelling and high resolution imaging to obtain information about particle positions, rotation and inter particle forces. We discuss our results in the context of the jamming scenario and also look at various measures capable of elucidating the physics of dense granular flows.

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