Particle Image Velocimetry Analysis of Granular Material Flows

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Digital Particle Image Velocimetry (DPIV) technique, well known in fluid mechanics, has been applied to evaluate main flow characteristics for granular material (amarantus seed) sliding between parallel walls of a Plexiglas model of a silo. The development and evolution of the consecutive stages of the flow will be demonstrated. The vertical velocity functions on the horizontal sections of the model are used to describe different flow regimes. Velocity fields are used to calculate particle tracks, lines representing main flow structure.

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