

Abstract Submitted  
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**Measuring the effect of air during granular impact events** DEVARAJ VAN DER MEER, TESS HOMAN, Physics of Fluids, University of Twente, The Netherlands, SYLVAIN JOUBAUD, Laboratoire de Physique, CNRS-Université de Lyon, France, DETLEF LOHSE, Physics of Fluids, University of Twente, The Netherlands — Air is known to play a crucial role during the impact of a sphere into a bed of fine, loose sand. This can be traced back to a significant increase of the drag the object experiences inside the sand at low ambient pressures, but what remains unclear is the mechanism by which the drag increases. To shed light upon this mechanism we record the pressure changes during impact, both above and below the bed. From this, with the help of Darcy's law, we deduce the magnitude of the air flows inside the sand which are caused by the impacting sphere and relate these to the observed drag increase.

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