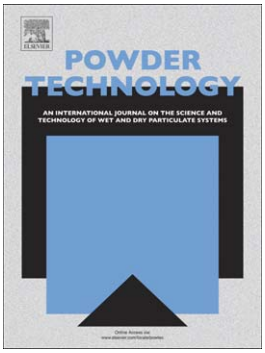

Anomalies in normal and oblique collision properties of spherical particles

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Anomalies in normal and oblique collision properties of spherical particles

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Abstract

Collision of particles either between themselves or with the wall, are typically characterized by normal and tangential coefficients of restitution, which depend on material and surface properties of the colliding objects. An accurate estimate of coefficients of restitution is of importance as it is one of input parameters in the discrete element simulations of a large system of particles. Often anomalies in the experimentally obtained values of the coefficients are reported in the literature. In the present work, both normal and tangential coefficients of restitution along with the surface and the local material properties are determined and compared with the predictions of the existing models. In certain cases, the experimentally obtained values agree fairly well with the values determined using the models while in some other cases anomalies in the experimental results are observed.

Keywords: Collision properties, Oblique collision, Coefficient of

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