



IFPRI BRIEF TEMPLATE

Check One: Project Review Collaboration
 Workshop Other

Descriptive Title	Review of theoretical and experimental advances in contact models to incorporate roughness, plasticity, etc
Working Title¹	Advances in contact models for DEM
Technical Area²	Characterization (primary) / Dry Systems (secondary)
Date	6/25/2019
Objectives	Review of experimental and theoretical work relevant to evaluating or extending smooth spherical adhesive models, such as JKR (1971), Thornton-Ning (1998), Mindlin-Deresiewicz (1953) and Briggs-Savkoor (1977), and their application/suitability for DEM simulation of cohesive powder”
Scope	(1) Review experimental (e.g. particle-particle AFM) and simulation (e.g. interacting surface FEM) literature for force and deformation for <i>both</i> normal and tangential contact of cohesive particles with surface roughness, plasticity, non-spherical contact, etc (2) Review theoretical extensions of commonly-used DEM contact models. Evaluate these theoretical advances for practical application to DEM Out of scope: non-cohesive contact; electrostatic forces

Recommended Contractors (2 or 3)		
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Satoro Watano	consultant

¹ Title used in meeting agendas and file archives

² One or more from the following list: W = wet systems; D = dry systems; F = particle formation; SR = size reduction; M = modeling; SE = systems engineering