IFPRI BRIEF TEMPLATE

Check One: ☒Project   ☐Review   ☒Collaboration
             ☐Workshop   ☐Other

Descriptive Title	Beyond DEM: Industry-relevant scale simulations for flow of powders and grains and implementation *in industry*
Working Title[1]	Beyond DEM: continuum powder flow modeling *in industry*
Technical Area[2]	Dry powder flow
Date	14-06-2022
Short Description	General continuum solvers for particle flows, suitable for use in industry with adjustable boundary conditions and adjustable friction parameters, including a recipe for determining simulation (e.g., friction, restitution, continuum rheology) parameters from real powders.
Objectives	Obtain, test and verify (an) open-source package(s) for dense powder flows and apply in industry, including procedures to determine relevant parameters for real powders. Make package(s) available to all IFPRI members, including standard flow simulations such as silo flow, shute flow and rotating drum flow.
Scope	Open-source, basic continuum solver for dense dry media, including an adjustable friction coefficient, wall friction coefficient, arbitrary geometries, and capability of forming new free surfaces, options for rapid flow effects on friction and the dependence of friction on evolving packing fraction and including a Graphical User Interface. Make available to IFPRI members, documentation and updates and examples.

Recommended Contractors (2 or 3)		
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Submitted By:	
Name	**Organization**
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[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