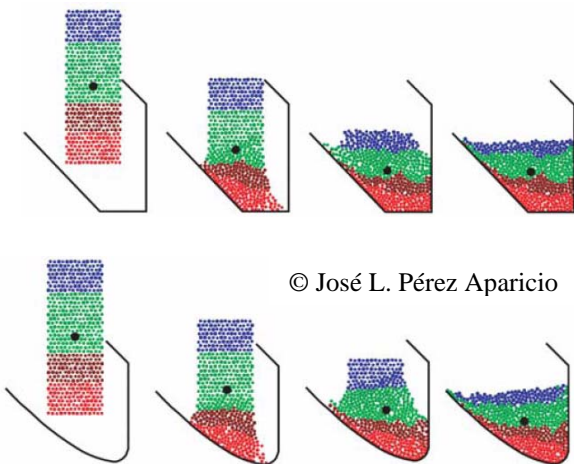
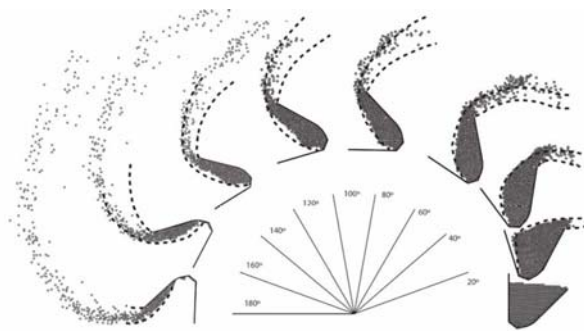


# Discrete Element Method

The term **discrete element method** (DEM) is a family of numerical methods for computing the motion of a large number of particles. With advances in computing power and numerical algorithms for nearest neighbor sorting, it has become possible to numerically simulate millions of particles on a single processor. Today DEM is becoming widely accepted as an effective method of addressing engineering problems in granular and discontinuous materials, especially in granular flows, powder mechanics, and rock mechanics.



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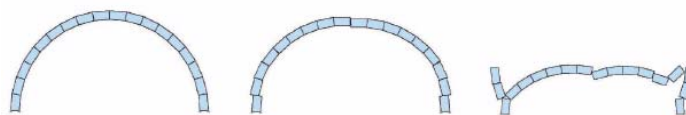


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The aim of this Software Lab is to write a program from scratch that makes use of the Discrete Element Method. The implementation should be performed in Matlab, as an efficient program for numerical computations.

## Tasks:

1. simulate the drop of a single ball and its rebound on the ground
2. solve the filling problem (left pictures)
3. solve the centrifugal discharge (right picture)
4. solve the thin arch problem



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## Supervisors

David Franke, Computation in Engineering, [franke@bv.tum.de](mailto:franke@bv.tum.de)  
 Martin Ruess, Computation in Engineering, [ruess@tum.de](mailto:ruess@tum.de)

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