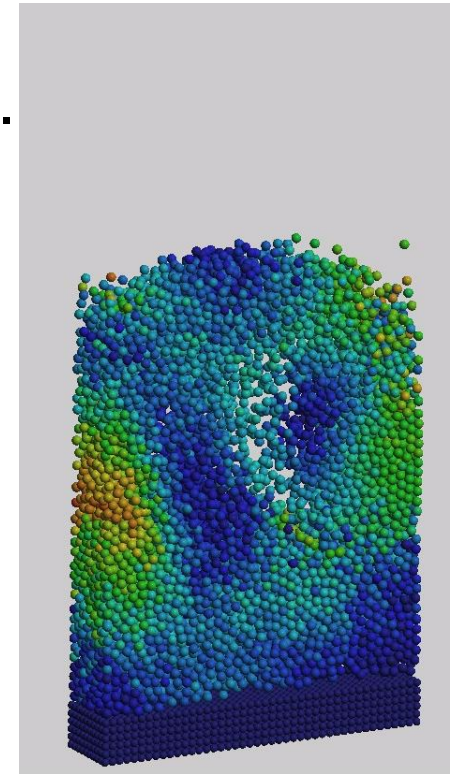# Definition of Use Cases

DEM.M1 - Fluidized bed

- Fluidized bed process very common in pharmaceutical and chemical industries.

- ~ 12000 particles / time-step

- ~ 3000 contacts (p2p and p2w) / time-step.

- 40 000 time-steps.

  - Particle results: mass, volume, velocity vector

  - Contact results: Force vector.

DEM.M2 – Rail Embankment

- Simulations with a high frequency output that cover long time durations are difficult to deal with on a desktop. The rail embankment model selected has the following settings:
  - 207,440 particles per time-step
  - ~560,000 contacts per time-step
  - 9,102 time-steps – 100Hz output
  - Particle results:
    - mass, volume,
    - velocity vector, angular velocity vector
  - Contact results:
    - Force vector