DYNAMIC GENERATOR

Dynamic generator allows to generate new objects (particles or agglomerates – see *Fig. 1*) dynamically during simulation. See examples:

- www.youtube.com/watch?v=Uv3xQWrJP-g

- www.youtube.com/watch?v=GiW9MBaldZc

The user can specify one or several generation volumes with different parameters. Objects will be randomly generated in these volumes. To simplify specification of volume properties, these volumes can be visualized on the main scene.
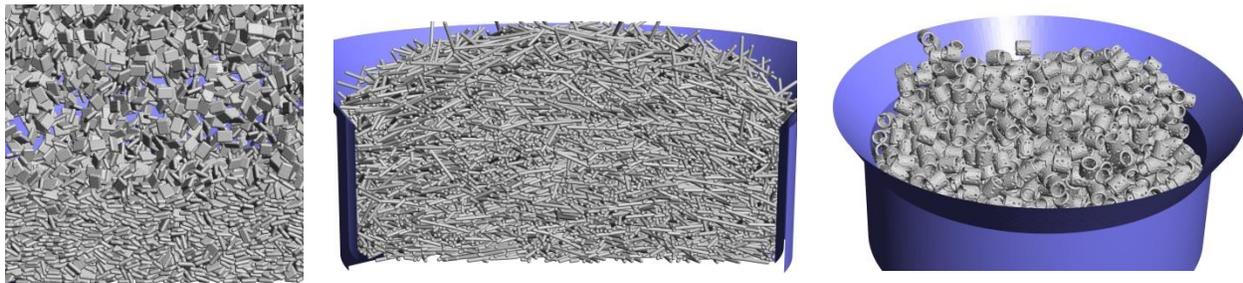

Fig. 1. Examples of application of objects generator for non-spherical particles.

For each generation volume following parameters should be specified:

- *Generation volume:* choose an appropriate analysis volume to generate into;
- *Generation objects:* during simulation spherical particles (in form of mixtures; must be defined in Scene -> Materials Editor -> Mixtures) or agglomerates from current agglomerate database can be generated. If agglomerate is selected, then materials for bonds and for particles of this agglomerate should be specified;
- *Object velocity:* all objects generated in this volume will have this velocity. If random velocity is specified, then initial direction of velocity will be randomly directed in 3D;
- *Start time and end time:* defines time interval when generation will be performed;
- *Updating step:* generation of objects is performed stepwise manner. For example if start time = 0; end time = 1; generation rate = 2000 1/s; updating step = 0.02. Then after each 0.02 seconds 40 objects will be generated;
- *Generation rate:* defines how many particles will be generated per second.

! Generation of objects in specific volume is performed randomly. However, if there is no free place in the volume (too many objects), then the new objects will not be generated. After specific amount of faulty tries to place the object the generation on current step is stopped.

! After each updating step the whole simulation scene is saved, therefore to reduce amount of generated data, updating step should be selected as large as possible for current simulation.

! Generation volumes can have overlaps, that allows to generate different type of objects in one place.