

## Symposium Speakers

### Camille Schreck (INRIA)

**Title:** StarDEM: a simulation method for designed granular material.

**Abstract:** Granular materials --composed of a large number of distinct solid objects such as sand or gravel-- are ubiquitous around us. They exhibit fascinating properties that make them useful for a wide range of applications in many domains such as architecture, medicine or robotics. The recent advances in additive manufacturing open new paths for them. Indeed it is now possible to fabricate particles with complex geometry in a number large enough while accurately controlling their shape and size, leading to a new kind of material: designed granular material. They can be related to metamaterials but without a fixed structure as there is no cohesion between the particles.

In that context, an efficient and accurate simulation method would avoid the need for time-consuming and expensive experiments with fabricated particles while allowing researchers to explore the properties of those materials. In this talk, I will present our method dedicated to such granular materials composed of identical fabricated particles. Our method focuses on the stable and efficient simulation of star-shaped particles and can handle a large variety of non-spherical particles, including highly non-convex geometries.