

1116-92-450

A. Bass Bagayogo* (abagayogo@ustboniface.ca), 200 Avenue de la Cathédrale, Winnipeg, Manitoba R2H 0H7, Canada. *Mathematics of Granular Materials and the Future of this Natural Resource.*

Granular materials are simple: large conglomerations of discrete macroscopic particles. Despite this seeming simplicity, granular materials behave differently from any of the other standard and familiar forms of matter: solids, liquids or gases, and should therefore be considered as an additional state of matter in its own right. In this talk I will first address the mathematics behind the granular fluid, gas and solid in term of Navier-Stokes and Boltzmann equations and showing some numerical simulations results. In the second point I will focus on the specific case of sands used for constructions, computers, mobile phones and others new technologies. I will make some practical suggestions for an optimal sand mining for a better preservation of sands, which has become one of the most widely consumed natural resource. (Received September 02, 2015)