

Introductory words

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One of the most interesting and unexpected new frontiers of physical science is the study of granular matter. The understanding of this apparently simple system made up of classical particles, often of macroscopic size, that interact predominantly by contact forces with one another requires the combined capacity and creativity of scientists and engineers working in different areas and inevitably bearing different points of view.

This workshop is a sequel of the Southern Workshop on Granular Materials 2003 in Pucon, Chile. The Southern Workshop on Granular Materials 2006 was realized on 13–16 September, 2006 at the seaside resort of Reñaca, Viña del Mar, Chile. Many of the world leading contributors on the subject were present. About 55 scientists and 31 students participated, both local and from abroad. You can still visit its web page (<http://www.dfi.uchile.cl/~granular06/>) and check the list of talks. The initiative for both events was spearheaded by the “Center for Advanced Interdisciplinary Research in Materials—CIMAT”.

The workshop has addressed a variety of theoretical and experimental issues in granular physics, including the dynamics and rheology of granular flow with and without interstitial fluids, granular static and aging, the statistical mechanics of granular gases and fluids, and applications of granular physics to problems of geophysical and industrial interest.

We have especially tried to bring together practitioners from a wide variety of fields to discuss these latter

applications. Special effort has been devoted to create the right environment for experts from the region and the rest of the world to present their results and discuss those of others.

This volume contains a summary of part of the talks delivered at the conferences. Due to the limited available space, two or three speakers were asked to write a single brief article including the most significant aspects of their presentations. This volume includes contributions in topics such as: theory and experiments on avalanches, forces and sound propagation in model systems, hydrodynamics description of dense flows, molecular dynamics computer simulations, statistical descriptions of clustering transitions and binary mixtures.

We are very grateful to the scientific committee for providing generous advice and valuable suggestions. We specially acknowledge Mrs. Erika Inostroza for taking care of the logistic, communications and all the things and details that made our stay in Reñaca pleasant. We own gratitude to Professor Fernando Lund for encouraging us to organize the first southern workshop on the field.

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The workshop benefited with the presence of an important number of graduate and under graduate students. We are very grateful to all them for their enthusiast collaboration, we have no doubt they contributed to create an ambience of fluent exchanges and animated evenings. We specially thank the speakers for their pedagogical presentations, for promoting enlightening discussions and sharing expertise with colleagues and students.

We really hope we can meet you all very soon in Chile for our third version of the southern workshop.

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