

HARD-CORE COLLOIDS UNDER CONFINEMENT: WHAT CAN BE LEARN FROM COMPUTER SIMULATIONS

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The talk will be focused on the phenomenon of a hard-core fluid model beginning from van der Waals and later on Bernal, Percus-Yevick, Zwanzig, Widom, Barker-Henderson and Weeks-Chandler-Anderson. The role of computer simulation algorithms such as the conventional Metropolis and molecular dynamics in the studies of the variety of hard-core fluid models will be outlined. The application of a hard-core model to understand various hot topics in the physics of a soft condensed matter e.g., the role of the entropy, the nature and the mechanism of the phase transitions, etc will be presented and discussed.