

Freezing of a two-dimensional matter

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Low-dimensionality systems have attracted the interest of researchers due to both the potential applications ranging from experimental to technological as well as because of several hot topics of a fundamental origin that remain open. One of these topics concerns the possible scenarios of the freezing and melting transitions in a two-dimensional hard-core system. Different empirical criteria have been used so far to deal with this issue. In present talk we will discuss the freezing mechanism that has been proposed recently and is based on both Monte Carlo and molecular dynamics study of the structure, ordering, thermodynamics and transport phenomena in the two-dimensional hard disk model.