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Kinetic Programmed Resuspension - KPR Technique

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Abstract

In particle resuspension phenomena, experimental and simulation evidence demonstrate that, as the acceleration increases, higher air velocities are needed for particle re-entrainment, and the process requires less time to develop. In order to describe this problem and to shed light to its understanding, we present in this paper a new analysis named Kinetic Programmed Resuspension (KPR). This new insight into the kinetics of the resuspension process provides a technique for determining some resuspension experimental parameters. Thereby, using a simple Monte Carlo model, we are able to reproduce experimental data and, from these results, to analyze the main kinetic parameters involved, just by analogy with the process of thermal desorption of molecules from surfaces.

Graphical abstract

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