

Wannier-type threshold laws for multifragmentation, secondary threshold laws and Thomson's problem

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Wannier-type threshold theory for multifragmentation processes is based on existence of special classical trajectories in a system of charged particles. These trajectories describe scaling in time of initial configuration without changing its shape. The relation between the scaling configurations and famous Thomson's (or surface Coulomb) problem is analyzed.

The other issue discussed is the secondary threshold laws that are operative at some separations from the threshold on the energy scale. A physical resonance mechanism leads to the emergence of secondary threshold laws in processes of multiple ionization of atoms by electron impact. This provides a possible explanation of the recent experimental results of B. Gstir et al. [Nucl. Instrum. Methods B **205**, 413 (2003)].