pair correlation length, ξ

in thin films

A quantity which approximates to the characteristic length associated with certain number density profiles of diffuse layers. ξ is defined as the separation between two interacting entities (molecules, macromolecular segments, ions, spins), either in bulk or interfacial regions, beyond which an appropriate function, referred to as pair correlation function, either decays (e.g. to $\frac{1}{e}$ of an 'initial' value) or vanishes. A characteristic length must be confused neither with the effective thickness of the interfacial layer, nor with the range (effective distance) of the intermolecular (pair) potential. This range is defined by the distance over which this potential and the corresponding correlation function both vanish.

Source:
PAC, 1994, *66*, 1667 *(Thin films including layers: terminology in relation to their preparation and characterization (IUPAC Recommendations 1994))* on page 1674