Atomic Cluster Charge build-up

The **charge build-up** on the cluster is due to electrons free-streaming from the surface of the nanoplasma. The model allows an electron to free-stream if it is less than one mean free path (in the direction of travel) from the surface and if its energy is greater than the escape energy of the cluster. The mean free path is calculated using the Spitzer formula [42]. The escape energy is calculated from the potential energy on the surface of a sphere with charge *Q*, assuming that the charge is distributed isotropically over the sphere and scales as *Q/r*. Free-streaming of the most energetic electrons depletes the hot tail of the Maxwellian electron distribution. Electron emission data [43] suggest that the rethermalisation - though extremely rapid - is not always fast enough to completely repopulate this tail. However, the assumption of a Maxwellian electron energy distribution is overall a good one. [TD69.pdf, page 314]

See Also

Atomic Cluster Expansion
Atomic Cluster Heating
Atomic Cluster Ionization
Atomic Cluster X-Ray Emission
Atomic Clusters
charge
charge-bundle
Formation of Atomic Clusters
Laser Cluster Interactions
Models of Laser Cluster Interactions