

SPECTRA DUE TO DIELECTRONIC RECOMBINATION

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Dielectronic recombination (DR) is an electron-ion process particularly effective in high temperature plasmas such as those observed in the Solar Corona, Supernovae remnants in fusion plasmas (Tokamak and laser produced plasmas). This process is a resonant capture process of projectile electrons by a target ion as one of the target electron is excited, thereby forming an intermediate autoionising state which can decay radiatively to a singly excited state. DR plays an important role on the establishment of ionisation equilibrium in the plasma and is also responsible for spectral lines appearing as satellites of the resonance lines of the target ion. The analysis and interpretation of such satellite lines in terms of plasma diagnostics has been widely used in soft X-ray spectroscopy during the last decade, and has given reliable estimates of the physical parameters of the plasma (electron and ion temperatures and densities). In the case of H-like and He-like resonance lines, high resolution spectra have been obtained in Tokamak for $Z = 14 - 28$ and most of the satellites have been clearly identified. To help the reader to go further we give some references of solar studies ^{2, 3, 4, 5}, Tokamak ^{6,7}, laser plasma ^{8,9}.

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