

Atomic data and Stark broadening parameters for Si VI ion

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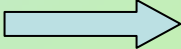
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Atomic data

- Atomic data are calculated using SUPERSTRUCTURE code (Eissner et al. 1974) as modified by Nussbaumer & Storey (1978).
- Two atomic models are adopted
9-configurations model : $2s^2 2p^5$, $2s 2p^6$, $2s^2 2p^4 3l$, $2s^2 2p^4 4l$ ($l \leq n-1$).
26-configurations model : $2s^2 2p^5$, $2s 2p^6$, $2s^2 2p^4 3l$, $2s^2 2p^4 4l$, $2s^2 2p^4 5l$, $2s^2 2p^4 6l$, $2s 2p^5 3l$, $2p^6 3l$ ($l \leq n-1$).
- The relativistic corrections are included by using the Breit-Pauli Hamiltonian
- We also use the so-called term energy corrections (TEC) introduced by Zeippen et al. (1977)
- Our transition probabilities are compared with NIST values and multiconfiguration Hartree-Fock (MCHF) results of Froese-Fischer & Tachiev (2004).
- For weighted oscillator strengths, comparison is made with Coutinho & Trigueiros (1999) using multiconfiguration Hartree-Fock relativistic (HFR) approach.

Stark broadening parameters

- Energy levels and oscillator strengths  Stark broadening parameters due to electron- and proton-impact for 5 Si VI multiplets.
- Semiclassical perturbation method (Sahal-Bréchet 1969a, 1969b).
- Electron density of 10^{17} cm^{-3} . Temperatures from 100000 up to 800000 K
- Comparison is made with Dimitrijević (1993) using the modified semiempirical formula (Dimitrijević & Konjević 1980).