Atomic structure of the doubly ionized titanium Ti III ion

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In this work, we calculated *ab initio* and semi-empirically energy levels, lifetimes, oscillator strengths and transition probabilities of the doubly ionized titanium by two methods: the first one is by adapting the wave-functions using the Hartree-Fock and the configuration interaction methods, and the second one is by adapting potential using the Thomas-Fermi-Dirac-Amaldi (TFDA) method.
Atomic structure codes are adapted to give the lifetimes of the considered energy levels by inversing the sum of the dipole transition probabilities. The calculated atomic structure parameters of the Ti III ion are compared with NIST database and with other available data.