# Differential cross section of dielectronic recombination with H-like uranium

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Investigation of the dielectronic recombination with H-like uranium within the framework of QED is presented. We consider process where the initial state is presented by a one-electron ion of uranium being in the ground state and by an incident electron. The energy of the initial state is close to the energies of double-excited states ($(2s, 2s)$, $(2s, 2p)$, $(2p, 2p)$). The final state is given by a two-electron ion in one of the single-excited states ($(1s, 2s)$, $(1s, 2p)$) and by emitted photon. The process of dielectronic recombination is a resonant process. The resonances in the cross section correspond to the double excited states. In the resonant area the dielectronic recombination gives the main contribution to the cross section.

The calculation is performed with employment of the line-profile approach [1,2]. The one-photon exchange correction for the low-lying states is taken into account in all orders of the QED perturbation theory. The electron self-energy and vacuum polarization corrections are considered in the first order of the perturbation theory.

We present results of the calculation of the total and differential cross section. The polarization properties are also considered and the Stokes parameters are presented. The contribution of the Breit interaction to the cross section and to the Stokes parameters is investigated. The results are compared with available experimental and theoretical data.

**References**

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