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## NS super-excited molecular states in the collision of electrons with NS<sup>+</sup> cation

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The recent discovery of the NS<sup>+</sup> cation in the interstellar medium<sup>1</sup> triggered the interest in the study of its collision with electrons. In this complex process, the electron can be captured into NS Rydberg-bound states predissociated by Feshbach resonances of this latter molecule. These both types of states have been calculated within the Born-Oppenheimer approximation using a variationa ab-initio method based on the the R-matrix theory. The electronically-excited Rydberg states form series converging either to the ground or to the excited states of the cation. We will focus on the Rydberg series of 2Σ<sup>+</sup> symmetry converging to the ground X1Σ<sup>+</sup> state of the ion, conveniently characterized by their quantum defects or effective quantum numbers.

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