# INFLUENCE OF CONSTANT MAGNETIC FIELD ON ENERGY SPECTRUM OF RYDBERG ATOMS

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We develop the hypothesis about the coherent quantum origin of the decameter radiation of the system Jupiter – Io that may explain its very high brightness temperature. The typical magnitude of a magnetic field in the system produces the necessary value of the cyclotron frequency $\omega_c$ that is close to the experimentally observed one and corresponds to the quantum transitions between Landau levels. A possible source of this radiation is the transitions in the spectrum of highly excited hydrogen atoms (Rydberg atoms) that has a narrow band of almost equidistant levels (Landau quasi-levels) in a constant magnetic field. This part of the spectrum is calculated by a new nonperturbative method. We discuss also an additional formation mechanism of Rydberg atoms in a dusty plasma.