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A possible interpretation of the optical spectrum for BL Lac-type objects

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Abstract

On the basis of Sobolev's method, the population of 30 levels of hydrogen atom is determined allowing for the radiative and collision processes of the heating and ionization of the medium with velocity gradient $\text{grad } v = 10^{-9} - 10^{-11} \text{ s}^{-1}$, electron temperature $T_e = 10^4 \text{ K} - 2 \times 10^4 \text{ K}$ and electron density $N_e = 10^{10} \text{ cm}^{-3} - 10^{11} \text{ cm}^{-3}$. The central source radiation is characterized by a power spectrum with spectral indices varying from 0 to 2. A region of possible physical conditions is found where the thermal diffuse radiation of the envelope exceeds the emission in the Balmer $H\beta$ line. © 1984 D. Reidel Publishing Company.

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