



Optica Applicata 2006(Vol.36), No.4, pp. 529-533

Hyperfine structure and isotope shifts in 461.9 nm forbidden line of Pb I

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Keywords

hyperfine structure, isotope shift, forbidden lines, lead

Abstract

Studies of the hyperfine structure and the isotope shifts in the 461.9 nm ($^1S_0-^3P_1$) magnetic-dipole line of Pb I are presented. As a light source the electrodeless discharge tube was used. The high resolution spectral apparatus consisted of a silver coated Fabry-Perot etalon and a grating spectrograph combined with a CCD camera used as a detector. In the analysis of the spectra a computer simulation technique was used. The experiments with the isotope ^{207}Pb yielded the hyperfine structure splitting constant A for the 3P_1 level of the $6s^26p^2$ ground configuration. In the experiment with natural lead the isotope shifts between four stable isotopes (204, 206, 207, 208) were measured.



183.9 kB

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