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Energy Levels of the $6p_{3/2}ns, nd, ng$ Autoionizing Series of Pb I

Chao ZHOU, Liang LIANG and Ling ZHANG

Department of physics, Xi'an University of Architecture and Technology, Xi'an, 71005,

Shannxi province of P.R. CHINA

e-mail: zc0921@sina.com

 [Keywords](#)
 [Authors](#)



phys@tubitak.gov.tr

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Abstract: Based on the weakest bound electron potential model (WBEPM) theory, six energy levels of the autoionizing Rydberg series $6pns\ 3/2[3/2]_1$ ($n = 15-25$), $6pns\ 3/2[3/2]_2$ ($n = 15-25$), $6pnd\ 3/2[3/2]_1$ ($n = 13-25$), $6pnd\ 3/2[5/2]_3$ ($n = 13-25$), $6pnd\ 3/2[7/2]_3$ ($n = 14-25$) and $6png\ 3/2[5/2]_2$ ($n = 5-25$) of Pb I are calculated. Foreign level perturbation corrections are taken into account in calculations of four series among them. The theoretical calculated results are in good agreement with the known experimental data, and some energies without experimental values are predicted.

Key Words: WBEPM, Pb atom, Rydberg states, energy levels.

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