

Abstract Submitted
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Core excitation effects on oscillator strengths for transitions in four electron atomic systems¹ T. N. CHANG, USC, Los Angeles, CA and NCTS, Hsinchu, Taiwan, YUXIANG LUO, USC, Los Angeles, CA — By including explicitly the electronic configurations with two and three simultaneously excited electronic orbital, we have extended the BSCI (B-spline based configuration interaction) method [1] to estimate directly the effect of inner shell core excitation to oscillator strengths for transitions in four-electron atomic systems. We will present explicitly the change in oscillator strengths due to core excitations, especially for transitions involving doubly excited states and those with very small oscillator strengths. The length and velocity results are typically in agreement better than 1% or less. [1] Tu-nan Chang, in *Many-body Theory of Atomic Structure and Photoionization*, edited by T. N. Chang (World Scientific, Singapore, 1993), p. 213-47; and T. N. Chang and T. K. Fang, Elsevier Radiation Physics and Chemistry **70**, 173-190 (2004).

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