Physics > Atomic Physics

Parity nonconservation in ytterbium ion

B. K. Sahoo, B. P. Das

(Submitted on 7 Jul 2011)

We consider parity nonconservation (PNC) in singly ionized ytterbium (Yb+) arising from the neutral current weak interaction. We calculate the PNC electric dipole transition amplitude (E1_PNC) and the properties associated with it using the relativistic coupled-cluster theory. E1_PNC for the [4f^{14}] ^2 6s --> [4f^{14}] ^2 5d_{3/2} transition in Yb+ has been evaluated to within an accuracy of 5%. The improvement of this result is possible. It therefore appears that this ion is a promising candidate for testing the standard model of particle physics.

Comments:	In Press, Phys. Rev. A as Rapid Communication, 1 figure and 3 tables
Subjects:	**Atomic Physics (physics.atom-ph)**
Cite as:	**arXiv:1107.1288 [physics.atom-ph]**
	(or **arXiv:1107.1288v1 [physics.atom-ph]** for this version)

Submission history

From: Bijaya Sahoo Dr. [view email]
[v1] Thu, 7 Jul 2011 03:50:34 GMT (11kb)

Which authors of this paper are endorsers?