



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Physical Review & Research International
Manuscript Number:	2013_PRR1_6994
Title of the Manuscript:	Two-Body Dirac Theory

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
<p>The comment on E,H as being either E or H is puzzling since the two fields have opposite parity (E is a polar vector like the gradient it follows but not H). This should be addressed in the final version of the paper as this mixed parity operator (with the H choice) appears throughout the paper. Parity is not violated for the electromagnetic interactions of the electron.</p> <p>The authors appear to have ignored the problems mentioned in regard to the use of the Hartree Fock for a two body system, except for a statement that the c.m. is regarded as fixed. But in their Eq. (III-1) a portion of the c.m. ($r+r'$) is not fixed but is averaged over the extent of the positron. Their later publications hopefully will address the significance of this omission.</p> <p>This reviewer also pointed out to the authors in the initial review that the two-body Dirac equations of constraint dynamics [25] has been "used to search for states below the nominal ground state" for positronium (the 2012 paper mentioned in the initial report), so they should modify the quoted sentence in the text.</p> <p>Once these are addressed I recommend publication and hopefully there will be a fruitful interchange between the authors and the readers.</p>	<p>I have added discussion on this point on page 12 beginning with, "The 4-gradient renormalized using.....", and continuing to the top of page 13.</p> <p>I believe that the exponentially decaying form of the trial wave function will be unlikely to contribute to center-of-mass motion such that the latter may be considered to be fixed at the origin.</p> <p>Discussion and reference added top of page 16.</p>