Is the orbital-doublet E_g state the ground state of the Mn^{3+} ion in $LaMnO_3$? YES, the problem is solved!

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In a year 1996, when only schematic electronic structure of the Mn^{3+} ion in $LaMnO_3$ was presented, I came out with the idea that the ^5E_g state is the ground state submitting to Phys. Rev. B a paper under a title as above (PRB-BZR586). The referee has rejected our paper arguing errors in our computer program claiming that the ^5E_g state cannot be splitted (see p. 24 and 27) - after long discussions and extra our results (p. 26, 28-30, 32-33) the referee has admitted that our calculations are correct writting "I am full of apologies to the author. I tried to make a simple estimate of the spin-orbit effects but made a trivial error ...." (page 31). We argue the PR Editors that our paper should be published as it reveals facts unknown to so good specialist, as PR referees are. It did not help.

Later our ^5E_g state paper on $LaMnO_3$ has been rejected at the SCES-02 Conference because the Chairmen stated that our paper wrongly presents electronic structure being reversed to generally accepted t_{2g}(lower)-e_g scheme (see p. 41 and next). The subsequent rejection becomes later a general discrimination of the localized-electron approach within the crystal-field theory.

After 10 years it is clear that we have been right. We clarify the different versions of the crystal-field theory, one-electron and many-electron approaches. We have recognized that the many-electron crystal-field theory is equivalent to the strongly-correlated electron limit. In the atomic-like strongly-correlated crystal-field approach, Quantum Atomistic Solid State Theory (QUASST), we have managed to solve both the magnetism of 3*d* oxides (NovaScience USA 2005, Acta Physica vol. 5, available online) and strongly-correlated electron systems subject (Acta Physica vol. 7-8) in consistent way as properties of rare-earth compounds. QUASST extended the CEF theory showing importance of the spin-orbit coupling for 3*d* compounds and enabling the CEF theory to calculate magnetically-ordered state. For $FeBr_2$ (PRB 63 (2001) 172404), NiO (Acta Physica 1 (2006) 26), FeO and $LaCoO_3$ (PRB 67 (2003) 172401) we have demonstrated *ab initio* crystal-field calculations.

In the situation when our crystal-field-based approach becomes physically adequate we expect a substantial donation from the American Physical Society and Phys. Rev. Editors to Polish physics owing to a few scientific bets for 1 million dollars undertaken during referee processes of our more than 20 papers and continuous rejection of Comments. We have found more than 18 erroneous papers in Phys. Rev. Lett. and Phys. Rev. B.

I turn to all physicists, Professors and researchers, for goodwill critics and honest scientific discussion.

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