

様式 4

湯川記念財団「望月基金」報告書

	申請者氏名	Marmorini Giacomo
論文名	New results for triangular-lattice quantum antiferromagnets in a magnetic field	
国際会議名	20th International Conference on Magnetism [ICM-2015]	
開催地	Barcelona, Spain	
参加期日	July 5-10, 2015	
<p>参加目的 : Our aim was to present our research to the broad and qualified audience of the conference and suggest further investigation, possibly with complementary theoretical techniques, of the various mechanisms of stabilization of non-classical magnetic states due to the cooperation of frustration and quantum fluctuations. Starting from our analysis of $\text{Ba}_3\text{CoSb}_2\text{O}_9$ we wanted emphasize on one side that in quantum frustrated systems even very small, apparently secondary, interactions can induce changes in the phase diagram and on the other side, more methodological, that traditional methods such as linear spin wave theory can miss quantitative or even qualitative agreement with the real effects of quantum fluctuations.</p>		
<p>会議の状況 : We delivered our presentation in the parallel oral session TU.C.3_O1 (attended by about 100 people) and received positive feedback from experts on triangular lattice antiferromagnets including Prof. Golosov from Bar-Ilan University, Israel.</p>		
<p>成果概要 : Considering the feedback received after the presentation, I think that our work has succeeded in improving the theoretical picture of quantum triangular antiferromagnets. Specifically it is clear that the community is interested in further understanding I) how the evaluation of exchange couplings via Electron Spin Resonance can be made more accurate by going beyond the simple theoretical assumption of semiclassical spin-wave spectrum and II) how to refine the calculation of quantum effect that are believed to induce a first-order phase transition between coplanar states with the same symmetry at high magnetic field and easy-plane anisotropy of about 50%.</p>		