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Magnetization Plateaux in a frustrated spin ladder TAKANORI SUGIMOTO, Tokyo Univ of Science, MICHIIYASU MORI, Japan Atomic Energy Agency, TAKAMI TOHYAMA, Tokyo Univ of Science, SADAMICHI MAEKAWA, Japan Atomic Energy Agency — Recently, successive phase transitions induced by magnetic field have been observed in BiCu_2PO_6 , whose effective spin model, a frustrated two-leg spin ladder, bridges between the frustrated spin chain and the non-frustrated spin ladder with one-half spins. According to theoretical studies, the frustrated spin chain exhibits one third plateau, although no plateau emerges in non-frustrated spin ladders. Therefore, a simple question arises as to whether the plateaux does appear in the frustrated spin ladder, or not. To clarify this question, we calculate the magnetic-field dependence of magnetization by using density-matrix renormalization-group method. In this calculation, we find some plateaux, which appear in neither the frustrated spin chain nor the non-frustrated spin ladder. Our study is useful to analyze experimental data of BiCu_2PO_6 .

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