Pseudospin Domain of $\nu = 1$ Double-layer Quantum Hall State near Commensurate-Incommensurate Transition

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The $\nu = 1$ quantum Hall (QH) state in a double-layer system around the commensurate (C) -incommensurate (IC) transition was investigated. Transport measurements around the C-IC transition reveal that there are two minima within the $\nu = 1$ QH state when the electron density in each layer was balanced. These minima induced by the difference of the in-plane magnetic field corresponds to the C phase and to the IC phase, respectively. Temperature dependence of magnetoresistance indicated that magnetoresistance between two minima remains finite even at the low temperature limit. The dissipative region between the two minima is interpreted as soliton lattice phase, which is the pseudospin domain in double-layer QH system, predicted by theory.