

Abstract Submitted
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Numerical study of real-time quantum dynamics in spin-electron coupled system WATARU KOSHIBAE, CMRG, RIKEN, Japan, NAOTO NAGAOSA, Dept. of Appl. Phys., Univ. of Tokyo, CMRG, RIKEN, CERG, RIKEN, Japan, NOBUO FURUKAWA, ERATO-MF, Aoyama-Gakuin Univ., Japan — The photo-induced metal-insulator transition is studied by the numerical simulation of real-time quantum dynamics of a double-exchange model. The spatial and temporal evolutions of the system during the transition have been revealed including (i) the threshold behavior with respect to the intensity and energy of light, (ii) multiplication of particle-hole (p-h) pairs by a p-h pair of high energy, and (iii) the space-time pattern formation such as (a) the stripe controlled by the polarization of light, (b) coexistence of metallic and insulating domains, and (c) dynamical spontaneous symmetry-breaking associated with the spin spiral formation imposed by the conservation of total spin for small energy-dissipation rates.

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