A NEW DOMINO MECHANISM OF PHOTOINDUCED PHASE TRANSITIONS IN ONE-DIMENSIONAL SYSTEMS: EFFECT OF LATTICE OSCILLATIONS IN AN EXCITED ELECTRONIC STATE

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The photoinduced domino effect for the phase transition dynamics in one-dimensional electron-lattice systems is investigated to clarify the dependence on the friction and interaction between neighboring sites. We find a novel photoinduced domino process in the case of strong intersite interaction and weak friction. In this domino motion, the photoexcited site is still *in an excited electronic state*, which is in striking contrast to the conventional domino. This mechanism explains the photoinduced phase transitions in systems which have a large-size nucleus of the developing new phase.