

Abstract Submitted
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Time-Dependent Recovery of Charge and Spin Order in Stripe-Ordered Nickelates¹ Y.F. KUNG, A.F. KEMPER, W.-S. LEE, B. MORITZ, A.P. SORINI, Z.-X. SHEN, T.P. DEVEREAUX, Stanford Institute for Materials and Energy Science, SLAC National Accelerator Laboratory and Stanford University — Using time-dependent Ginzburg-Landau theory, we study the melting and recovery of charge and spin order in striped nickelates ($\text{La}_{2-x}\text{Sr}_x\text{NiO}_4$) in response to an ultrashort pump pulse that destroys the order. We find that the critical temperature for onset of spin order varies with increasing coupling between charge and spin order. Solving the Gross-Pitaevskii equations to model the time evolution, we explore the temporal dynamics of charge and spin order parameters, to be compared to experimental observations at LCLS.

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