Time-Dependent Recovery of Charge and Spin Order in Striped Nickelate[1] Y.F. KUNG, C.-C. CHEN, A.F. KEMPER, Stanford University, W.-S. LEE, B. MORITZ, Stanford University and SLAC National Accelerator Laboratory, A.P. SORINI, Lawrence Livermore National Laboratory, Z.-X. SHEN, T.P. DEVEREAUX, Stanford University and SLAC National Accelerator Laboratory — Using time-dependent Ginzburg-Landau theory, we study the melting and recovery of charge and spin order in the striped nickelate $La_{1.75}Sr_{0.25}NiO_4$ in response to an ultrashort pump pulse that destroys the order. Treating the behavior of both the amplitudes and phases of the order parameters, we examine their effects on the recovery time scales of the charge and spin order. We compare the temporal dynamics of our model to experimental observations at the Linac Coherent Light Source (LCLS).

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