1077-VK-1683 **Yang Zou*** (yangzou@rams.colostate.edu), Department of Mathematics, Colorado State University, Fort Collins, CO 80526, **Gerhard Dangelmayr** (gerhard@math.colostate.edu), Department of Mathematics, Colorado State University, Fort Collins, CO 80523, and **Iuliana Oprea** (juliana@math.colostate.edu), Department of Mathematics, Colorado State University, Fort Collins, CO 80523. *Intermittency and chaos near Hopf bifurcation with broken $O(2) \times O(2)$ symmetry.*

Spatiotemporal complex dynamics, including chaos and intermittency, created at the onset of electroconvection in nematic liquid crystals can be modeled by Ginzburg Landau amplitude equations governing the dynamics of the envelopes of four oblique traveling waves. Simulations from this model indicate rapid switchings between a pair of symmetry-conjugated chaotic saddles. In this paper a low dimensional dynamical system, corresponding to a Hopf bifurcation normal form with broken translational symmetries, is introduced to capture this kind of switching dynamics. Symmetries, invariant subspaces, and a symmetry related transformation are analyzed theoretically in detail, and a variety of dynamical features, including symmetry increasings and decreasings, chaos, and in-out intermittency, are demonstrated in the dynamics of the perturbed normal form. (Received September 20, 2011)