Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Dynamics and rheology of active polar liquid crystalline films
LUCA GIOMI, M. CRISTINA MARCHETTI, TANNIEMOLA B. LIVERPOOL
— I will discuss the dynamical and rheological properties of active polar liquid crystalline films. Like active nematic films, active polar films undergo a dynamical transitions to spontaneously flowing steady-states. Spontaneous flow in polar fluids is, however, always accompanied by strong concentration inhomogeneities or "banding" not seen in nematics. In addition, a spectacular property unique to polar active films is their ability to generate spontaneously oscillating and banded flows even at low activity. The oscillatory flows become increasingly complicated for strong polarity.

Luca Giomi
Syracuse University

Date submitted: 21 Nov 2008 Electronic form version 1.4