1108-35-133   **Ryan N. Goh*** (`gohxx037@umn.edu`) and **Arnd Scheel**. *Hopf Bifurcation from Fronts in the Cahn-Hilliard Equation.*

We study Hopf bifurcation from traveling-front solutions in the Cahn-Hilliard equation. Models of this form have been used to study numerous physical phenomena, including pattern formation in chemical deposition and precipitation processes. Technically we contribute a simple and direct functional analytic method to study bifurcation in the presence of essential spectrum. Our approach uses exponential weights to recover Fredholm properties, spectral flow ideas to compute Fredholm indices, and mass conservation to account for negative index. We also construct an explicit, prototypical example, for which we prove the existence of a bifurcating front, and determine the direction of bifurcation. (Received January 07, 2015)