1113-35-220   **Laurence Cherfils*** (`laurence.cherfils@univ-lr.fr`), Université de La Rochelle, laboratoire MIA, Avenue Michel Crépeau, 17690 La Rochelle, France, **Hussein Fakih** (`hussein.fakih@math.univ-poitiers.fr`), Université de Poitiers, Laboratoire LMA, Boulevard Marie et Pierre Curie, SP2MI, Futuroscope, 86962 Chasseneuil, France, and **Alain Miranville** (`alain.miranville@math.univ-poitiers.fr`), Université de Poitiers, Laboratoire LMA, Boulevard Marie et Pierre Curie, SP2MI, Futuroscope, 86962 Chasseneuil, France. *On the Bertozzi-Esedoglu-Gillette-Cahn-Hilliard equation for image inpainting.*

A generalization of the Cahn-Hilliard equation with a fidelity term was initially introduced in 2007 by A. Bertozzi & al. for binary image inpainting. We are interested in the study of the asymptotic behavior, in terms of finite dimensional attractors, of the dynamical system associated with this problem. A major difficulty here is that we no longer have the conservation of mass, i. e. of the spacial average of the order parameter, as it was the case in the classical Cahn-Hilliard equation. We also propose and study some improvements of the model in order to deal with multicolor image inpainting and with grayscale image inpainting. We finally give numerical simulations which confirm the efficiency of these different models. (Received August 23, 2015)