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**Michael G Dabkowski\*** (mgdabkow@umich.edu), Department of Mathematics, University of Michigan, Ann Arbor, MI 48109, and **Joseph Conlon** and **Jingchen Wu**. *Fractional Differentiation Operators as Models of Diffusion*.

We study of a diffusive perturbation of the linear Lifschitz-Slyozov-Wagner model introduced by Carr and Penrose. A main subject of interest is to understand how the presence of diffusion acts as a selection principle, which singles out a particular self-similar solution of the linear Lifschitz-Slyozov- Wagner model as determining the large time behavior of the diffusive model. A selection principle is rigorously proven for a model which is a semi-classical approximation to the diffusive model. Upper bounds on the rate of coarsening are also obtained for the full diffusive model. (Received January 20, 2015)