

Chemotaxis and related phenomena have been an active area of mathematical research since statistical and PDE models were first proposed by C. Patlak ('53) and E. Keller & L. Segel ('71). They are commonly studied through mean field PDE models and a common feature of these equations is the possibility of finite time blow-up under given model parameters. Recently it was shown that advection by a sufficiently strong relaxation enhancing vector field could suppress this blow up (Kiselev & Xu '16, Iyer, Zlatos & Xu '20). In this talk I will discuss new results (obtained with M. Tomašević) regarding criteria for the persistence of blow-up for an SPDE model of chemotaxis with stochastic advection of a form recently shown to be almost surely relaxation enhancing (Gess & Yaroslavtsev '21).