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Tian Xiang* (txiang@ruc.edu.cn), No. 59, Zhongguancun Street, Haidian, Beijing, 100872. *On global and blow-up solutions for a short-ranged chemical signaling loop.*

In this talk, we consider the global boundedness and blow-up of solutions to a two-species and two-stimulus chemotaxis model, in which the process of the species results in a short-ranged chemical signaling loop. Explicit conditions on the initial data are given for the existence of simultaneous global boundedness and simultaneous finite-time blow up of classical solutions. More precisely, since the dynamics of one species are expected to be essentially determined by the other through this chemotactic signaling loop between two cell types, we find that only smallness of mass of one species implies global solvability, whereas, largeness of masses induce blow-up to occur. These in particular improve the known existing knowledge where smallness of total masses of both two species is required (Received September 26, 2018)