GLOBAL EXISTENCE AND BOUNDEDNESS IN A FULLY PARABOLIC 2D ATTRACTION-REPULSION SYSTEM:
CHEMOTAXIS-DOMINANT CASE

KENTAROU FUJIE
Department of Mathematics, Tokyo University of Science,
Tokyo, 162-8601, Japan
(E-mail: fujie@rs.tus.ac.jp)

and

TAKASHI SUZUKI
Department of Systems Innovation,
Division of Mathematical Science, Osaka University,
Osaka 560-0043, Japan
(E-mail: suzuki@simgath.es.osaka-u.ac.jp)

Abstract. This paper deals with the fully parabolic attraction-repulsion system in the two dimensional setting. Although the critical mass guaranteeing global existence of solutions was established for simplified cases, it is still open for the fully parabolic case. In this paper we construct a Lyapunov functional corresponding to the fully parabolic case and derive the critical constant.