Online Seminar on Chemotaxis

Date: 13th of May 2022 10:00 – 11:00 in "Central EU" hour
(which is 16:00 – 17:00 in "Beijing" hour and 17:00 – 18:00 in "Seoul–Tokyo" hour)

Speaker: Tomasz Cieślak (Institute of Mathematics, Polish Academy of Sciences)

Title: Chemorepulsion in higher dimensions. Second time derivative of the Liapunov functional.

Abstract:
My talk is based on common paper with K. Hajduk(IMPAN) and M. Sierzega(Warsaw University). We shall compute a second derivative of the Liapunov functional with respect to time. Using the Bakry-Emery-type estimates, as well as a new (hopefully interesting on its own) functional inequality, we shall provide a conditional global existence in 3D (the same approach yields global existence in 2D in convex domains). Moreover, we shall show that knowing the semiconcavity of chemorepellent, global existence in higher dimensions follows. Seminconcavity seems in agreement with the chemorepellent equation, this will be commented at the end of my talk.

Organizers: Jie Jiang (jiang@apm.ac.cn) and Kentaro Fujie (fujie@tohoku.ac.jp)