

# Hölder continuity of porous medium type equations with drift terms

Sukjung HWANG<sup>1</sup>

1) *Department of Mathematics, Yonsei University, Seoul, SOUTH KOREA*

Corresponding Author : Sukjung HWANG  
sukjung\_hwang@yonsei.ac.kr or sukjungh@gmail.com

## ABSTRACT

We discuss the Hölder continuity of porous medium type equations with drift terms. In other words, a proper  $L^p$  type class of drift vector fields to achieve Hölder continuity of a weak solution is the main ingredient of this talk. As an application, the results may imply the same regularity of porous medium type Keller-Segel systems. In addition, we discuss corresponding results for fast diffusion type equations.

## ACKNOWLEDGEMENT

This author was partially supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2017R1D1A1B03035152).

## REFERENCES

1. Y. Chung, S. Hwang, K. Kang, J. Kim, “ Hölder continuity of Keller-Segel equations of porous medium type coupled to fluid equations”, *J. Differential Equations*, Vol. 263, 2017, pp. 2157-2212.
2. I. Kim, Y. Zhang, “ Regularity properties of degenerate diffusion equation with drifts”, arXiv:1711.11143.
3. L. Silvestre, V. Vicol, A. Zlatoš, “On the loss of continuity for super-critical drift-diffusion equations”, *Arch. Ration. Mech. Anal.*, Vol. 207, 2013, pp. 845-877.