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# Analysis and PDE Seminar

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\*\*\*Revised\*\*\*

TITLE: Mixing in orientation for active suspensions

Date : May 26th, 2023 (Friday)

Time : 1pm-2pm (Hong Kong time)

2pm-3pm (Korea time)



Link to ZOOM : <https://unist-kr.zoom.us/j/3170659442>

Meeting ID : 317 065 9442

Password : APDE21

**Abstract.** We consider a model introduced by Saintillan and Shelley to describe active suspensions of elongated particles. This model, which generalizes the classical Doi model for passive suspensions, couples a Stokes equation for the fluid substrate and a transport equation for the density distribution of particles in space and orientation. We investigate mixing properties of this model (damping and enhanced dissipation). The main new feature of the analysis is that the usual velocity variable of the euclidean space is replaced by an orientation variable on the sphere, which is responsible for strong qualitative changes and new mathematical difficulties. This is joint work with M. Coti Zelati and Helge Dietert.

*All are welcome*

This is a joint activity organized by Department of Mathematics, The Chinese University of Hong Kong, Hong Kong; Department of Mathematics, Institute of Mathematical Research, Research Division of Mathematical and Statistical Science, The University of Hong Kong, Hong Kong; and Department of Mathematical Sciences, Ulsan National Institute of Science and Technology, Korea. More details can be found in [https://hkumath.hku.hk/~imr/event/CUHK\\_HKU\\_UNIST\\_Analysis\\_and\\_PDE/index.php](https://hkumath.hku.hk/~imr/event/CUHK_HKU_UNIST_Analysis_and_PDE/index.php).

