

$$\frac{\partial}{\partial t} \text{[graduation cap]} - \Delta \text{[graduation cap]} \\ = -\nabla \cdot (\text{[graduation cap]} \nabla \text{[campus scene]})$$



# The 6th International Workshop on Mathematical Analysis of Chemotaxis

## Overview

Time	Monday	Tuesday	Wednesday	Thursday	Friday
10:00 – 10:30	Registration	Jaewook Ahn	Giuseppe Viglialoro	Yuya Tanaka	Anna Zhigun
10:30 – 11:00	Opening				
11:00 – 11:30	Mario Fuest	Coffee break	Coffee break	Coffee break	Coffee break
11:30 – 12:00		Tobias Black	Felix Meyer	Gregor Flüchter	Shohei Kohatsu
12:00 – 12:30	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
12:30 – 13:00					
13:00 – 13:30	Discussion	Discussion	Discussion	Discussion	Discussion
13:30 – 14:00	Taiki Takeuchi	Yutaro Chiyo	Dongkwang Kim	Frederic Heihoff	Tomasz Cieślak
14:00 – 14:30			Jing Zhang		
14:30 – 15:00	Coffee break	Coffee break	Discussion	Coffee break	Closing
15:00 – 15:30	Duan Wu	Discussion	Sightseeing	Maren Hoberg	
15:30 – 16:00	Discussion			Discussion	
16:00 – 16:30	Silvia Frassu			Xu Pan	
16:30 – 17:00	Discussion			Discussion	
17:00 – 17:30					
17:30 – 18:00					

$$\frac{\partial}{\partial t} \begin{matrix} \text{👤} \\ \text{👤} \end{matrix} - \Delta \begin{matrix} \text{👤} \\ \text{👤} \end{matrix} \\ = -\nabla \cdot \left( \begin{matrix} \text{👤} \\ \text{👤} \end{matrix} \nabla \begin{matrix} \text{👤} \\ \text{👤} \end{matrix} \right)$$



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## List of talks

### Monday, February 13, 2023

11:00 – 12:00 **Mario Fuest**

*Critical mass phenomena in chemotaxis systems*

13:30 – 14:30 **Taiki Takeuchi**

*Vanishing viscosity method for the Keller-Segel-Navier-Stokes system*

15:00 – 15:30 **Duan Wu**

*Global boundedness to a forager-exploiter model*

16:00 – 16:30 **Silvia Frassu**

*Boundedness criteria for a class of indirect (and direct) chemotaxis-consumption models in high dimensions*

### Tuesday, February 14, 2023

10:00 – 11:00 **Jaewook Ahn**

*Global solutions for a food-metric chemotaxis system*

11:30 – 12:00 **Tobias Black**

*Hölder regularity for some degenerate parabolic equations of taxis type*

13:30 – 14:30 **Yutaro Chiyo**

*Boundedness in a chemotaxis system with sensitivity functions for tumor angiogenesis*

### Wednesday, February 15, 2023

10:00 – 11:00 **Giuseppe Vigliani**

*Blow-up prevention in chemotaxis models with dampening gradient sources*

11:30 – 12:00 **Felix Meyer**

*Mildly saturated nonlinear signal production in a cross-diffusion model for urban crime propagation*

13:30 – 14:00 **Dongkwang Kim**

*Global solutions to chemotaxis-fluid systems with possible singular chemotactic sensitivity*

14:00 – 14:30 **Jing Zhang**

*Blow-up of solutions for a chemotaxis model with singular sensitivity and logistic source*

$$\frac{\partial}{\partial t} \begin{matrix} \text{🎓} \\ \text{🎓} \end{matrix} - \Delta \begin{matrix} \text{🎓} \\ \text{🎓} \end{matrix} \\ = -\nabla \cdot \left( \begin{matrix} \text{🎓} \\ \text{🎓} \end{matrix} \nabla \begin{matrix} \text{🎓} \\ \text{🎓} \end{matrix} \right)$$



## Thursday, February 16, 2023

10:00 – 11:00 **Yuya Tanaka**

*Finite-time blow-up in a two-species chemotaxis-competition model*

11:30 – 12:00 **Gregor Flüchter**

*Effects of heterogeneous environments on chemotactic aggregation*

13:30 – 14:30 **Frederic Heihoff**

*Two new functional inequalities and their application to the eventual smoothness of solutions to a chemotaxis-Navier-Stokes system with rotational flux*

15:00 – 15:30 **Maren Hoberg**

*The semigroup in  $L_1$  associated with size-structured diffusive population models and application to a haptotaxis model*

16:00 – 16:30 **Xu Pan**

*On the strongly competitive case in a fully parabolic two-species chemotaxis system with Lotka-Volterra competitive kinetics*

## Friday, February 17, 2023

10:00 – 11:00 **Anna Zhigun**

*Generalised global supersolutions with mass control for systems with taxis*

11:30 – 12:00 **Shohei Kohatsu**

*Stability of constant equilibria in a Keller–Segel system with gradient dependent chemotactic coefficient*

13:30 – 14:30 **Tomasz Cieślak**

*Fisher's entropy and systems of PDEs*