

What do mathematicians question ?

- a personal thought -

Kaname Matsue*, †

During my activities as a mathematician, I have seen many researchers in various fields, such as materials science and industry at Tohoku University (JST-CREST, and WPI-AIMR) and the Coop with Math Program [1]. We have struggled to communicate and make our researches progress many and many times. There I have thought the role of mathematicians, and I have got several keywords to focus on our roles, which link not only mathematical studies but also collaborative researches between mathematics and various scientific fields.

In this talk, I provide three keywords which mathematicians focus on through several topics in my research activities, such as hierarchical analysis of structures in amorphous materials [2], blow-up phenomena of solutions of differential equations [4, 7], rigorous numerics of global solution trajectories in multiple time-scale dynamical systems [3], topology optimization for the first eigenvalues of heat diffusion media [5] and quantum walks on simplicial complexes [6] as long as time permits. The keywords will help you with collaborative research activities between energy science and mathematics here at I²CNER.

References

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*Institute of Mathematics for Industry, Kyushu University, Fukuoka 819-0395, Japan
kmatsue@imi.kyushu-u.ac.jp

†International Institute for Carbon-Neutral Energy Research (WPI-I²CNER), Kyushu University, Fukuoka 819-0395, Japan