

## 27th Rencontres ITZYKSON : Fluctuations far from Equilibrium



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### Makiko SASADA - Axiomatization of the theory of hydrodynamic limits and its benefits

*Thursday, June 1, 2023 3:00 PM (45 minutes)*

Over the past 30 years, the hydrodynamic limit has been proved for many interacting particle systems. However, there are still many models for which rigorous proofs are missing, especially those called non-gradient models. Also, most of the existing results are for models on  $\mathbb{Z}^d$  lattices with one conserved quantity. There has been no theory of how much existing theories can be generalized, and to do so, it is necessary to abstractly define the class of models to be covered and the several key concepts, such as “number of conserved quantities” and “gradient condition”. In this talk, I will introduce an abstract framework and definitions that set the stage for a general formulation of the hydrodynamic limit, and present results obtained in such a general setting, as well as some conjectures. Applications for specific models obtained by such a generalization will be also presented.

**Presenter:** SASADA, Makiko (Tokyo University)