

# 784<sup>th</sup> ASRC Seminar

**Date:** Mar. 11 (Wed), 15:00~16:00

**Location:** Meeting room 302, ASRC bldg.

**Speaker:** Dr. Mamoru Matsuo

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Chinese Academy of Sciences, CEMS/Riken)

**Title:** Spin transport driven by spin-vorticity  
coupling

## Abstract:

Spin current is a key concept in spintronics. Recently, the interconversion between the mechanical angular momentum of vortical objects and spin has attracted much attention [1-8]. In this talk, I will present our recent results on spin-current generation via spin-vorticity coupling in non-uniform materials, including a liquid metal flow[3,4], elastic materials[2,5], and a gradient material[8].

- [1] M. Matsuo et al., Phys. Rev. Lett. 106, 076601 (2011).
- [2] M. Matsuo et al., Phys, Rev. B 87, 180402(R)(2013).
- [3] M. Matsuo et al., Phys, Rev. B 96, 020401(R) (2017).
- [4] R. Takahashi et al., Nat. Phys. 12, 52 (2016).
- [5] D. Kobayashi et al., Phys. Rev. Lett. 119, 077202 (2017).
- [6] STAR Collaboration, Nature 547, 62 (2017).
- [7] K. Harii et al., Nat. Comm. 10, 2616 (2019).
- [8] G. Okano et al., Phys. Rev. Lett. 122, 217701 (2019).

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