

# Pairing dynamics of polar states in quenched p-wave superfluid Fermi gases

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## 报告人简介:

Gentaro Watanabe, ZJU100 Young Professor.

### Education:

Apr. 2000-Mar. 2003 Ph.D student. Department of Physics, School of Science, University of Tokyo.

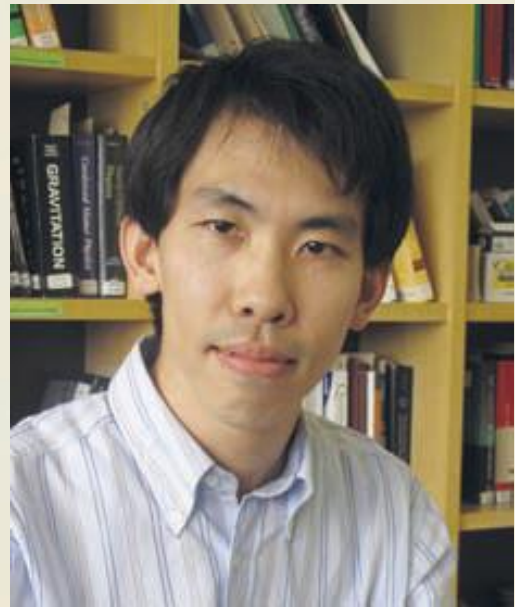
Mar. 2003 Doctorate (Doctor of Science)

### Professional Experience:

May 2015 -Feb. 2016 Research Fellow. Institute for Basic Science (IBS)

Sept. 2015 -Feb. 2016 Adjunct Professor (Professor) School of Science, University of Science and Technology (UST)

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## Abstract:

The quench problem is one of the most basic setups for studying the non-equilibrium dynamics. We have performed the first study on the quench dynamics of polar states in 3D p-wave superfluid Fermi gases [1]. The anisotropy of the pairing interaction together with the presence of the centrifugal barrier results in profoundly different pairing dynamics compared to the s-wave case. Especially, we have found the novel dynamics of oscillatory depletion or filling in the momentum occupation depending on the direction of the quench, and the emergence of a vortex-ring structure in pair amplitudes. Our work also clarifies the mechanism of these dynamics and figure out the important role of quasi-bound (resonant) state in the quench dynamics.

## Reference

[1] S. Yoon and G. Watanabe, Phys. Rev. Lett. 119, 100401 (2017).