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Theory of tunneling conductance of anomalous Rashba metal / spin-singlet superconductor junction TOSHIYUKI FUKUMOTO, KATSUHISA TAGUCHI, Graduate School of Engineering, Nagoya University, SHINGO KOBAYASHI, Graduate School of Engineering, Nagoya University; Institute for Advanced Research, Nagoya University, YUKIO TANAKA, Graduate School of Engineering, Nagoya University — In superconducting spintronics, the spin configuration is known as one of the key physical properties on the charge transport. Recently, systems dubbed anomalous Rashba metal (ARM), where the Zeeman field and the RSOI coexist, have attracted much attention. In the ARM, the relative direction of the spin and the momentum are locked due to the RSOI, and the electrons spin degrees of freedom is reduced to be half [1]. Owing to the unique spin configuration of the ARM, it can be expected that we obtain the unique feature of the charge transport. In the presentation, we report the obtained tunneling conductance of two-dimensional ARM / spin-singlet superconductor junctions. As results, it is found that the inner gap conductance is enhanced by the RSOI, and it can be understood from the spin configuration of the ARM [2].

[1] P. Štředa *et al.*, Phys. Rev. Lett. **90**, 256601 (2003).

[2] T. Fukumoto *et al.*, Phys. Rev. B **92**, 144514 (2015).

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