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Continuous dc Spinmotive Force in a Patterned Ferromagnetic Film YUTA YAMANE, Advanced Science Research Center, Japan Atomic Energy Agency and Institute for Materials Research, Tohoku University, KOHEI SASAGE, TOSHU AN, KAZUYA HARII, Institute for Materials Research, Tohoku University and CREST, Japan Science and Technology Agency, Japan, JUN-ICHIRO OHE, CREST, Japan Science and Technology Agency and Dept of Physics, Toho University, JUN'ICHI IEDA, Advanced Science Research Center, JAEA, and CREST, Japan Science and Technology Agency, STEWART BARNES, Physics Department, University of Miami, EIJI SAITOH, Advanced Science Research Center, JAEA; Institute for Materials Research, Tohoku University; and CREST, Japan Science and Technology Agency, SADAMICHI MAEKAWA, Advanced Science Research Center, Japan Atomic Energy Agency and CREST, Japan Science and Technology Agency — Recently, a motive force of spin origin, i.e., a "spinmotive force", has been theoretically predicted[1] and experimentally observed[2,3]. A spinmotive force reflects the spin of electrons in an essential manner and is a new concept relevant to electronic devices. However, problems remain, one of which is the continuous generation of such a spinmotive force. In this study, we present experiment and theory that demonstrate the continuous generation of a dc spinmotive force by exciting a ferromagnetic resonance of a single comb-shaped ferromagnetic thin film[4]. Experimental results are well reproduced by theoretical calculations, offering a quantitative and microscopic under-Yuta Yamane

standing of this spinmotive force.
Advanced Science Research Center, Japan Atomic Energy Agency and [1] S. Barnes and S. Maekawa, PRL 98, 246601 (2007). [2] S. A. Yang et al. PRL 102, 067201 (2009). [3] P. N. Hai et al. Nature 458, 489 (2009).

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