

Reorientation of a Moving Vortex Lattice in Amorphous $\text{Mo}_{1-x}\text{Ge}_x$ Superconducting Films

N. Kokubo^a, H. Tamochi^b, B. Shinozaki^b, T. Nishizaki^c, and N. Kobayashi^c

^aCenter for Research and Advancement in Higher Education, Kyushu University, Fukuoka, Japan

^bDepartment of Physics, Kyushu University, Fukuoka, Japan

^cInstitute for Materials Research, Tohoku University, Sendai, Japan

The orientation of a vortex lattice in the flux-flow state of amorphous $\text{Mo}_{1-x}\text{Ge}_x$ superconducting films is studied by mode-locking experiments. We observe the formation of a hexagonal vortex lattice in the flux-flow state for almost three decade of the velocity range up ~ 20 m/s, which is about 1/10 of the critical velocity (~ 100 m/s) at which the flux-flow instability occurs.¹ The orientation of the hexagonal lattice is observed to be either parallel or perpendicular to the direction of motion, and the reorientation occurs at a characteristic velocity (~ 1 m/s), separating the perpendicular orientation at small velocity from the parallel orientation at high velocity.

¹M. Liang and M. N. Kunchur, Phys. Rev. **B 82** 144517 (2010).