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Anomalous Magnetic Properties near the Spin-Flop Bicritical Point in Mn_2AS_4 (A = Si and Ge) KENYA OHGUSHI, YUTAKA UEDA, ISSP, Univ. of Tokyo — The magnetic properties of the single crystalline Mn_2AS_4 (A = Si and Ge) with an olivine structure, which are the uniaxially anisotropic antiferromagnets (the b-axis as an easy axis), were investigated. Near the Néel temperature, both compounds exhibit the contrastive magnetic responses along the c-axis, namely, the spontaneous weak ferromagnetism in A = Si and the significant enhancement of the differential susceptibility (dM/dH) under the small magnetic field in A = Ge. When A = Ge, we also observed the evolution of dM/dH along the a-axis at low temperatures. We discuss these phenomena on the basis of the magnetic field-temperature ($H-T$) phase diagram with the spin-flop bicritical point (H_{BP}, T_{BP}). The role of the thermal or quantum fluctuation was stressed. (Ref.) K. Ohgushi and Y. Ueda, Phys. Rev. Lett. **95**, 217202 (2005)

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