Anomalous Magnetic Properties near the Spin-Flop Bicritical Point in \( \text{Mn}_2\text{AS}_4 \) \((A = \text{Si and Ge})\) KENYA OHGUSHI, YUTAKA UEDA, ISSP, Univ. of Tokyo — The magnetic properties of the single crystalline \( \text{Mn}_2\text{AS}_4 \) \((A = \text{Si and Ge})\) 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 \( A = \text{Si} \) and the significant enhancement of the differential susceptibility \( (dM/dH) \) under the small magnetic field in \( A = \text{Ge} \). When \( A = \text{Ge} \), 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)