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Observation of the anomalous antiferromagnetic resonance in λ -(BETS)₂FeCl₄

λ -(BETS)₂FeCl₄ consists of the conducting π -electrons of BETS molecules and the localized d -electrons of Fe³⁺ ions, and strong π - d interaction is expected owing to the short contacts between BETS molecules and FeCl₄. Although λ -(BETS)₂FeCl₄ shows simultaneously a metal to insulator transition and antiferromagnetic long-range order at 8.3 K, the origin of this antiferromagnetic insulating (AFI) phase is under debate for the past few decades. We have performed ESR measurements in the AFI phase λ -(BETS)₂FeCl₄, and have observed anomalous behavior of the antiferromagnetic resonance where the easy-axis seems to change with temperature and field. In my poster, I will introduce our measurement results and discuss about the AFI ground state.