

Master's theses

Two second-year master course students from the Tokunaga Laboratory have successfully completed their master's theses and passed their defenses.

Mr. Osamu Tsutsui wrote his thesis with the title “Ultrasonic study of electronic and lattice states on layered Dirac fermion system $\text{Ba}_{1-x}\text{Sr}_x\text{MnBi}_2$ ”. His thesis provides a semi-quantitative discussion of the electronic states underlying the magnetic-field-induced structural phase transition, based on detailed analysis of quantum oscillations.

Mr. Hayato Hirano's thesis is titled “Anomalous Quantum Response of Polar Semiconductor SnTe in High Magnetic Fields.” To investigate the origin of the oscillating phenomena observed in ultrasonic measurements of this material, he observed quantum oscillations using magnetoresistance measurements. Comparing the results, he proposed that the ultrasonic oscillatory phenomena are also quantum oscillations, exhibiting peculiar behavior due to unique electron-lattice coupling.

Both students are scheduled to join private companies from this April. We wish them continued success in their future endeavors.