

Abstract Submitted
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Development of semi-rigid cables for low temperature superconducting detectors AKIHIRO KUSHINO, Kurume University, SOICHI KASAI, COAX CO., LTD. — We are developing semi-rigid cables for accurate readout of superconducting radiation/particle detectors and other low temperature experiments. The center conductor with a diameter of 0.86 mm is separated with seamless metal outer conductor by dielectric material, polytetrafluoroethylene. We used various metal materials with low thermal conductivity for the electrical conductors such as stainless-steel, cupro-nickel, brass, beryllium-copper, phosphor-bronze, niobium-titanium, and niobium. In addition to the conventional semi-rigid cables, low-pass-filter type cables were manufactured and evaluated to cut the high frequency noise into superconducting detectors. We measured their low thermal conductance and attenuation property up to 10 GHz below the liquid helium temperature.

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