

Integrating Complex Magnets with the Cryogen Free Dilution Refrigerator

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Magnets built using both NbTi and Nb₃Sn have now been integrated onto a single 4K pulse tube cooler that has the primary function of running a dilution refrigerator. Solenoids at various fields, three axis vector magnets and magnets with field cancellation regions have recently been integrated onto a number of cryogen free dilution refrigerators using a single, 1W at T=4.2K pulse tube.

The minimal effect of this system integration on the dilution refrigerator is detailed for a number of the configurations. Finally, some of the current developments to further open out this new era of magnetic field provision at ultra low temperatures are described.