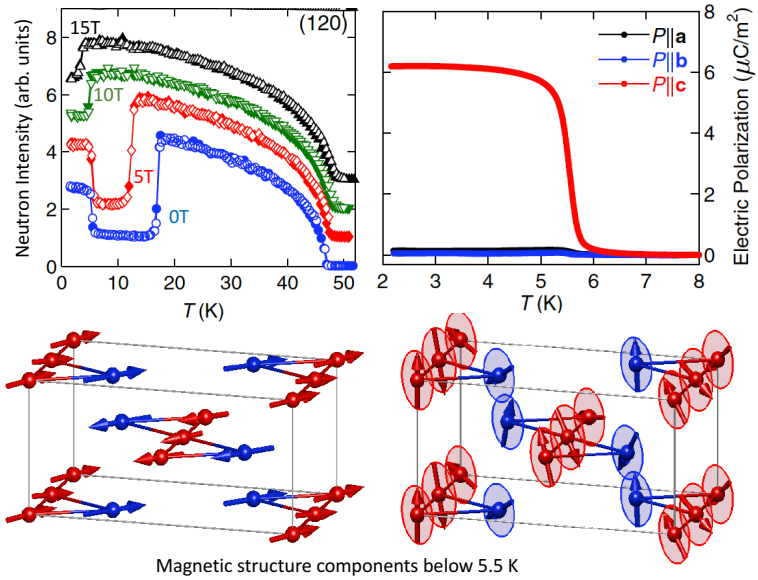
ZEBRA single crystal neutron diffraction

Multiferroic materials are intensively studied because of need for new and better magnetoelectric functional devices.
Mn2GeO4, a member of the olivine family, features both a ferroelectric polarization and a ferromagnetic magnetization that are directly coupled and point along the same direction.

Experimental setup:
We shall selectively repeat the single crystal neutron diffraction experiment published by J.S. White in PRL 108, 077204 (2012). We shall identify three magnetic phases appearing at 47K, 17K and 5.5K and discuss why ferroelectricity appears only below 5.5K.



Magnetic structure components below 5.5 K