Dy$_2$ScNbO$_7$: an unconventional spin ice?

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Using standard solid state methods, Dy$_2$ScNbO$_7$, a member of a new series of pyrochlore oxides was synthesized. While the A-site is occupied by the magnetic Dy$^{3+}$ cation, the B site is split into a mixture of disordered Sc$^{3+}$ and Nb$^{5+}$ cations. It appears that Dy$_2$ScNbO$_7$ has low temperature spin ice state that is similar to the titanate analogue, Dy$_2$Ti$_2$O$_7$. Despite its similarities, Dy$_2$ScNbO$_7$ exhibits much faster spin dynamics than any other dysprosium spin ice candidate. Attempts to grow single crystals of Dy$_2$ScNbO$_7$ have been successful using the floating zone image furnace. Recent characterization results will be presented.