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Properties of frustrated one dimensional S=1/2 Heisenberg antiferromagnets in zero and applied fields MICHAEL BANKS, REINHARD KREMER, Max Planck Institue fuer Festkoerperforschung, Stuttgart Germany — The Phase diagram for a S = 1/2 J_1-J_2 exchange model on a one dimensional chain offers phases with no classical analogue. We will present a summary of experimental findings on quasi-one dimensional S = 1/2 (Cu^{2+}) chain systems with competing interactions along the chain, which lie in the frustrated helix part of this phase diagram. Compounds in this region of the phase diagram have similar magnetic properties, including a common magnetic structure with an incommensurate helix which is polarized along the chain. The application of a magnetic field applied in the helix plane offers a rich phase diagram with yet unknown phases. This will be discussed primarily for the quasi one dimensional compound $LiCuVO_4$.

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