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Interacting antikinks on a diamondback ladder I MAYRA TOVAR, KIRILL SHTENGEL, University of California at Riverside — Recently introduced "antikinks" are spin 1/2 excitations of the Heisenberg antiferromagnet on a sawtooth lattice. The idea is that they mimic spinons of the kagome antiferromagnet. Antikinks are triangles of spins which are not in their ground state. Treating antikinks as free non- interacting particles (a good approximation for the sawtooth chain), their energy was found to be substantially reduced by delocalization. We study antikinks on a "diamondback" ladder in which all spins are shared between two triangles. Consequently, in a uniform case the concentration of antikinks becomes 1/4 and they strongly interact, making such a model a much better approximation for the kagome case. We treat these effects perturbatively by allowing different Heisenberg couplings on the up- and downward oriented triangles, the two limiting cases being the sawtooth and uniform diamondback ladder. We find a non-monotonic, power-law decay of induced interactions between the antikinks with their separation. The consequences of these interactions will be discussed in this talk.

Mayra Tovar
University of California at Riverside

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