Topological defects in a spin-nematic phase on the triangular lattice HIROAKI UEDA, NIC SHANNON, Okinawa Inst of Sci & Tech — Topological defects play an important role in the theory of nematic phases in liquid crystals. However, relatively little is known about their role in quantum spin nematics[1,2,3]. Here we consider the topological defects which could arise in such a state. The model we consider is the spin-1 bilinear biquadratic model on the triangular lattice, tuned to an SU(3) point[4,5,6]. We classify defects by homotopy theory, and explore how they evolve into the neighboring anti-ferroquadrupolar spin-nematic phase.

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