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Quantum spin liquid in a  $\pi$  flux triangular lattice Hubbard model STEPHAN RACHEL, Technical University Dresden, MANUEL LAUBACH, University of Wuerzburg, JOHANNES REUTHER, Dahlem Center for Complex Quantum Systems and Freie Universitaet Berlin, RONNY THOMALE, University of Wuerzburg — We propose the  $\pi$  flux triangular lattice Hubbard model ( $\pi$ -THM) as a prototypical setup to stabilize magnetically disordered quantum states of matter in the presence of charge fluctuations. The quantum paramagnetic domain of the  $\pi$ -THM which we identify for intermediate Hubbard U is framed by a Dirac semimetal for weak coupling and by 120° Neel order for strong coupling. Generalizing the Klein duality from spin Hamiltonians to tight-binding models, the  $\pi$ -THM maps to a Hubbard model which corresponds to the  $(J_{\rm H}, J_{\rm K}) = (-1, 2)$  Heisenberg-Kitaev model in its strong coupling limit. The  $\pi$ -THM provides a promising microscopic testing ground for exotic finite-U spin liquid ground states amenable to numerical investigation.

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