

Abstract Submitted  
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**The boson-Hubbard model on a kagome lattice with a sextic ring-exchange term**<sup>1</sup> VALERY ROUSSEAU, KA-MING TAM, JUANA MORENO, MARK JARRELL, Louisiana State University (LSU) — We present exact quantum Monte Carlo simulations of hard-core bosons in a two-dimensional Kagome lattice with a sextic ring-exchange term. We study how the superfluid density evolves as the ring-exchange interactions are increased. We show that the system becomes unstable in the limit of large interactions at all fillings and undergoes a phase separation, except at  $\frac{1}{3}$  and  $\frac{2}{3}$  fillings for which the superfluid density vanishes and a solid state forms.

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