

Abstract Submitted  
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**Local physics of magnetization plateaux in the Shastry-Sutherland model**<sup>1</sup> LEONID ISAEV, GERARDO ORTIZ, Physics Dept., Indiana University, Bloomington, IN, JORGE DUKELSKY, Instituto de Estructura de la Materia - CSIC, Madrid, Spain — We address the physical mechanism responsible for the emergence of magnetization plateaux in the Shastry-Sutherland model. By using a hierarchical mean-field approach we demonstrate that a plateau is stabilized in a certain *spin pattern*, satisfying *local* commensurability conditions derived from our formalism. Our results provide evidence in favor of a robust local physics nature of the plateaux states, and are in agreement with recent NMR experiments on  $\text{SrCu}_2(\text{BO}_3)_2$ .

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