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Topological degeneracy in the RVB phase of the Quantum Dimer Model on the triangular lattice ARNAUD RALKO, Intitute of Theoretical Physics, EPFL CH-1015 Lausanne, Switzerland, MICHEL FERRERO, FEDERICO BECCA, International School for Advanced Studies (SISSA), I-34014 Trieste, Italy, DIMITRI IVANOV, FREDERIC MILA, Intitute of Theoretical Physics, EPFL CH-1015 Lausanne, Switzerland — Using numerical methods such as exact diagonalizations and Green function monte carlo (GFMC), we study ground state properties of the different topological sectors of the Quantum dimer model on the triangular lattice to characterize the phases of the system and the transition points between them. Thanks to the large sizes available with GFMC, we show in particular that in the thermodynamic limit, the four topological sectors are indeed degenerate. Finally, we show that the correlation functions are consistent with the identification of the ordered phases by Moessner and Sondhi.

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