

Abstract Submitted
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Invariant correlation entropy as a signature of quantum phase transitions in spin-1/2 systems¹ DAVIDA KOLLMAR, LEA SANTOS, Yeshiva University — The invariant correlation entropy was introduced in the context of nuclear physics as a way to quantify the degree of complexity of quantum states. Contrary to the Shannon information entropy or the inverse participation ratio, this entropy is basis independent. We show that it peaks in critical regions and can therefore be used to signal quantum phase transitions. Our findings are based on the numerical analysis of one-dimensional spin-1/2 systems described by different Heisenberg models and by the anisotropic XY model in a transverse magnetic field.

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