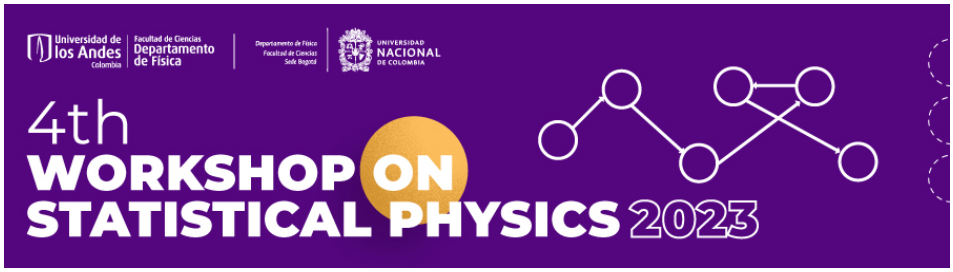

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A combinatorial calculation of the microcanonical average value of magnetization magnitude for the one-dimensional Ising model

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A common application of the Ising model is the study of ferromagnetic materials and their properties. One of said properties, **M**, the magnetization, can be so easily defined that one may wonder if it is possible to come up with an analytical way of estimating its average value. Using the microcanonical framework of counting the different states the system can be in, this work proves a closely related question (dealing with the mean value of $|\mathbf{M}|$, the magnetization magnitude, instead) can be reduced to a combinatorics problem, and presents solutions of this for different versions of the one-dimensional Ising model.

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