Entanglement entropy of random quantum critical points with
general spin JOEL MOORE, UC Berkeley, GIL REFAEL, California Institute of
Technology — The bipartite entanglement at 1D critical points of a subsystem of
$N$ sites with the remainder is known to diverge as $\log N$, with a coefficient that
is related to the central charge for conformally invariant critical points. It was
recently shown that for a class of spin-half random critical points, there is also a
logarithmic divergence with a coefficient that is universal and corresponds to an ir-
rational “effective central charge.” This talk discusses generalizations of this result
to higher-spin chains, including the permutation-symmetric critical points found by
Damle and Huse, using a combination of analytic and numerical real-space renor-
malization group methods. Higher-spin chains show numerous complications relative
to the spin-half case, such as the introduction of ferromagnetic bonds; their study
provides a stringent test of the conjectured $c$-theorem for central charges defined via
entanglement entropy.

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