

Abstract Submitted
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Amplitude mode in diluted $O(N)$ models YURY KISELEV, DANIEL AROVAS, Univ of California - San Diego — The relativistic $O(N)$ model has recently been shown to exhibit a robust amplitude mode peak in its scalar susceptibility which exhibits scaling in the vicinity of the quantum critical point [PRL 110, 140401 (2013)]. We report on the $O(N)$ model with random site dilution, which we study using the worm algorithm [PRL 87, 160601 (2001)]. We present results for the scalar susceptibility and $O(N)$ conductivity in the critical region and follow the system's behavior as the dilution tends to the percolation threshold.

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