

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**The de Almeida-Thouless line of the four-dimensional Ising spin glass** VICTOR MARTIN-MAYOR, Universidad Complutense de Madrid, JANUS COLLABORATION — We present the results of a large scale numerical simulation of the four dimensional Edwards-Anderson model in an external field. Using the Janus computer, as well as standard CPU clusters, we simulate lattices of size up to  $L=16$  at several values of the external field. Our analysis method departs from the standard one. In fact, it has been previously noticed that the spin-glass susceptibility (i.e. the spin-glass propagator at zero external momentum) behaves anomalously. Instead, one should focus on the propagator at small but non-vanishing wave-vector. Starting from this observation, we obtain a simple and powerful finite-size scaling method. Clear evidence for a de Almeida-Thouless line is found. We compute critical exponents, widely differing from the zero field case, with an accuracy of five percent. The shape of the de Almeida-Thouless line in the  $(T,h)$  plane follows the Fisher-Sompolinsky scaling. Discrepancies with previous work are explained in terms of very strong scaling corrections.

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Date submitted: 16 Nov 2011

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