

Abstract Submitted  
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**Signatures of the random singlet phase after a bond-breaking**  
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Technology — We study the time evolution of one-dimensional hardcore bosons,  
initially prepared in a state with random nearest-neighbor hopping, after the severing  
of one nearest-neighbor bond. The initial system is equivalent to an xy spin chain  
with random nearest-neighbor bonds and displays a random singlet phase. Analytic  
results are demonstrated with exact numerical time-evolution of finite-sized systems.  
The correlations between pairs of sites in the time-evolving system after a single bond  
is broken display signatures of the critical phase as well as evidence of the “light  
cone” effect as information about the broken bond moves through the system.

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