

Abstract Submitted  
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**Collective states of interacting Yang-Lee anyons in 1D: the golden chain's twin** EDDY ARDONNE, Nordita, JAN GUKELBERGER, ETH Zurich, ANDREAS LUDWIG, UCSB, SIMON TREBST, Microsoft Station Q, MATTHIAS TROYER, ETH Zurich — Collective states of interacting non-Abelian anyons have recently been studied mostly in the context of exotic quantum Hall states. In this talk we will further expand this line of research and present certain non-unitary generalizations of the original golden chain model. In particular, we introduce the notion of Yang-Lee anyons, discuss their relation to the ‘Gaffnian’ quantum Hall wave function, and describe an elementary model for their interactions. A one-dimensional version of this model can be fully understood in terms of an exact algebraic solution and numerical diagonalization. We discuss the gapless phases of these models, and comment on the physical implications of the non-unitarity of their underlying critical theories.

Simon Trebst  
Microsoft Station Q

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