

## Workshop on Integrability



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# Integrability breaking in the one dimensional Bose gas: Atomic losses and energy loss

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The one dimensional  $\delta$ -function interacting Bose gas (the Lieb-Liniger model) is an integrable system, which can model experiments with ultra cold atoms in one dimensional traps. Even though the model is integrable, integrability breaking effects are always present in the real world experiments. In this work we consider the integrability breaking due to atomic loss, which is the most relevant effect in the experiments. We set up a framework for the exact computation of the losses of the canonical charges of the model, and compute an exact result for the energy loss due to the local K-body processes, valid for arbitrary K.

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**Track Classification:** Participants Talks: Abstracts of Participants Talks