

Surface defects and integrability

Thursday, March 5, 2026 4:30 PM (30 minutes)

Integrability of planar $N=4$ super-Yang-Mills (SYM) theory enables exact computations of unprotected observables, even with the insertion of certain extended operators. While integrability techniques have been successfully applied to some domain walls and line defects, it is an open question whether there are any integrable surface defects in $N=4$ SYM theory. In this talk, I will examine a class of $1/2$ -BPS surface defects known as Gukov-Witten defects. I will argue that these defects are generically not integrable but they are likely to become integrable at a corner in parameter space. I will present closed-form factorised expressions for leading-order one-point functions of unprotected scalar operators, hinting at the existence of all-loop formulas at this special point.

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