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Strings, integrability and beyond

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Domaines : hep-th

Titre : *Wilson lines as superconformal defects in ABJM theory : exact formulas for the emitted radiations*

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Résumé : *We study operator insertions into one-half and one-sixth BPS Wilson loops (defects) in ABJM theory and investigate their two-point correlators. In this framework, the energy emitted by a heavy moving probe can be exactly obtained from some two-point coefficients of bosonic and fermionic insertions. This allows us to confirm an early proposal for computing the one-half BPS Bremsstrahlung function in terms of certain supersymmetric circular Wilson loops, whose value might be accessible to localization techniques. Moreover, we find some simple relations between the one-sixth and one-half BPS Bremsstrahlung functions such that we are able to compute them exactly. In particular we compute the exact closed-form of the one-half BPS Bremsstrahlung function in terms of the interpolating function h(lambda) that plays, appearing in the magnon dispersion relation, a crucial role in the integrability-based computations in ABJM. In the derivation of this result we also elucidate the structure of protected multiplets in the relevant superconformal defect theories.*