

SEMPARIS – Séminaires en région parisienne

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Séminaire commun LPTENS/LPTHE

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Domaines : hep-th

Titre : *Constraints on parity violating CFTs in $d=3$*

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Résumé : *Conformal invariance allows additional unique parity-odd tensor-structures for three-point functions involving the stress tensor, T , and a conserved $U(1)$ current, j , in $2+1$ dimensional conformal field theories that violate parity, apart from the usual parity even structures. We study the modifications to the crossing equations in $d = 3$ for the four point function of two $U(1)$ currents and two scalars due to the presence of this parity violating term for the s -channel stress tensor exchange. We show the existence of a tower of double trace operators in the t -channel whose presence is necessary for the crossing equation to be satisfied and determine the corresponding large spin parity violating OPE coefficients. We then study the possible constraints on this parity violating coupling of the three point function from causality arguments and apply them to Large N Chern Simons theories coupled to fundamental matter which are known to be parity violating.*
