

SEMPARIS – Séminaires en région parisienne

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Séminaire commun LPTENS/LPTHE

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Domaines : hep-th

Titre : *Coulomb branch integrals and mock modular forms*

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Résumé : *We revisit Donaldson-Witten theory, that is the $N=2$ topologically twisted super Yang-Mills theory with gauge group $SU(2)$ or $SO(3)$ on compact 4-manifolds. We study the effective action in the Coulomb branch of the theory and by considering a specific Q -exact deformation to the theory we find interesting connections to mock modular forms. A specific operator of this theory computes the famous Donaldson invariants and our analysis makes their computation more accessible than previously. We also extend these ideas to the case of ramified Donaldson-Witten theory, that is the theory in the presence of embedded surfaces. Our results make calculations of Coulomb branch operators more trackable and we hope that they can help in the search of new 4-manifold invariants.*
