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Quantum Hall State on Singular Surfaces YU HUNG CHIU, Univ of Chicago, TANKUT CAN, Simons center for Geometry and Physics, Stony Brook University, MICHAEL LASKIN, PAUL B. WIEGMANN, Univ of Chicago — We propose a framework to study the response towards geometry with FQHE state on singular surfaces. Such study on singular surface provides a path to measure the gravitational anomaly, the third universal transport coefficient of FQHE, in leading order. The large N expansion of generating functional is computed via two independent methods: a Ward Identity and a field theory approach. Meanwhile the second moment of the density is also obtained via Ward Identity. We observe that the generating functional on singular surfaces can be viewed as vertex operators at the cone tips. Divergence in the Liouville functional due to singularities is, as expected, a source for the modification, but not the sole source. From both methods, we are able to obtain the charge and conformal dimension h_α of such a vertex operator. The talk will concentrate on the one cone result obtained via both approaches.

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