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**Ameya Pitale\*** (apitale@ou.edu), 2924 elmhurst ave, oklahoma city, OK 73120. *Integral representation and critical L-values for holomorphic forms on  $GSp(2n) \times GL(1)$ .*

In this talk, we will report on recent joint work with Abhishek Saha and Ralf Schmidt on integral representation of the standard L-function for holomorphic vector-valued Siegel modular forms of arbitrary genus and with respect to arbitrary congruence subgroup. A lot of work has been done on this topic by Andrianov, Harris, Sturm, Garrett, Shimura, Piatetski-Shapiro, Rallis and many others. To obtain the most general result, we adopt the adelic approach and obtain the pullback of an Eisenstein series on  $GSp(4n)$  to  $GSp(2n) \times GSp(2n)$ . The innovation is the choice of vectors in the ramified and the archimedean cases allowing us to get explicit formulas. The potential applications are arithmeticity of special values of L-functions as algebraic numbers (normalized by suitable periods), and one can further ask the prime factorization of those algebraic numbers. We will report on the arithmeticity results for the genus 2 case, which involves a deeper understanding of the structure of nearly holomorphic modular forms. (Received July 12, 2017)