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SHR-JING Chen* (SHRCHEN2000@YAHOO.COM), Rutgers university, Piscataway, NJ 08901. *Vertex operator algebras and integrable system.*

In this paper, we first study classical integrable systems with properties including existence of Lax pairs, the reality property, and a construction of solutions using loop group actions (dressing actions). Then we construct a lower truncate module for the corresponding affine Lie algebra of level 0 from the dual space of functions on the solutions space of integrable system. Due to the existence of isotropy group on the solution space of classical integrable system, we then consider central extension of the full loop group action and construct highest weight module by applying formal uniformization theorem of Barron, Huang and Lepowsky [?]. we conclude with discussion on vertex operator algebra module and Miura transformation in quantized integrable system and compared classical and quantized integrable systems in terms of Lax form. (Received August 21, 2008)