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**Nero Budur\*** (nbudur@nd.edu), Institute of Advanced Study, School of Mathematics, 1 Einstein Drive, Princeton, NJ 08540. *Local systems and multiplier ideals*. Preliminary report.

Using T. Mochizuki's work on the Hitchin-Kobayashi correspondence for quasi-projective varieties, we describe the space of unitary local systems of rank one on the complement of an arbitrary divisor in a smooth projective algebraic variety. This space has natural stratifications in terms of global invariants involving the multiplier ideals of the divisor and we give a structure theorem for them generalizing to the quasi-projective case results due to Green-Lazarsfeld and Simpson. We explore some "finite" and "semi-finite" information from this space of local systems. (Received August 17, 2006)