GEAR Junior Retreat

Suggested material for Richard Wentworth's mini-course

Basic background:

- R. Gunning, Lectures on Riemann surfaces. Princeton Mathematical Notes Princeton University Press, Princeton, N.J. 1966 iv+254 pp.
- S. Kobayashi, Differential geometry of complex vector bundles. Publications of the Mathematical Society of Japan, 15. Kano Memorial Lectures, 5. Princeton University Press, Princeton, NJ; Iwanami Shoten, Tokyo, 1987.

  Holomorphic bundles on Riemann surfaces – topology of symplectic quotients:

- M. Atiyah and R. Bott, The Yang-Mills equations over Riemann surfaces. Phil. Trans. R. Soc. Lond. A 308 (1982), 523–615.
- S. Donaldson, A new proof of a theorem of Narasimhan and Seshadri. J. Diff. Geom. 18 (1983), no. 2, 269–277.
- F. Kirwan, Cohomology of quotients in symplectic and algebraic geometry. Mathematical Notes, 31. Princeton University Press, Princeton, NJ, 1984.

Twisted harmonic maps:

- S. Donaldson, Twisted harmonic maps and the self-duality equations. Proc. London Math. Soc. 55 (1987), 127–131.
- K. Corlette, Flat G-bundles with canonical metrics. J. Diff. Geom. 28 (1988), 361–382.
- F. Labourie, Existence d'applications harmoniques tordues à valeurs dans les variétés à courbure négative. Proc. Amer. Math. Soc. 111 (1991), 877–882.
- J. Jost and S.-T. Yau, Harmonic maps and group representations. In *Differential Geometry*, Pitman Monographs Pure Appl. Math. 52, B. Lawson and K. Tenenblat, eds., 1991, 241–259.

Higgs bundles:

- N. Hitchin, The self-duality equations on a Riemann surface. Proc. London Math. Soc. (3) 55 (1987), no. 1, 59–126.
- C. Simpson, Systems of Hodge bundles and uniformization. Harvard thesis, 1987.

  Wentworth, Higgs bundles and local systems on Riemann surfaces. available at: http://www2.math.umd.edu/ raw/papers/papers.html