1001-14-254   **Edward Frenkel*** (`frenkel@math.berkeley.edu`), Department of Mathematics, University of
California, Berkeley, CA 94720-3840. *Introduction to the Geometric Langlands Correspondence.*
The Langlands Program, launched by R. Langlands in the late 60's, ties together seemingly unrelated objects in number
theory, algebraic geometry, and the theory of automorphic functions. The Langlands conjecture predicts that there is a
correspondence between n-dimensional representations of the Galois group of a number field and automorphic represen-
tations of the group GL_n over the ring of adeles of this field. This conjecture has an analogue when the number field is
replaced by the field of functions on a smooth projective curve defined over a finite field. In this setting, this conjecture
has a geometric version, called the geometric Langlands correspondence. It asserts, in particular, that to each irreducible
rank n local system on a smooth projective curve X (now defined over any field, e.g., the field of complex numbers) one
should be able to associate an object, called Hecke eigensheaf, on the moduli space of rank n bundles on X. Recently, a
lot of progress has been made in constructing the geometric Langlands correspondence, particularly, in the works of A.
Beilinson and V. Drinfeld. Some of the constructions use methods from physics, more specifically, conformal field theory.
In this talk we will give an introduction to the basic ideas of this subject. (Received August 27, 2004)