1036-32-52 **Sudeb Mitra*** (sudeb.mitra@qc.cuny.edu), Department of Mathematics, Queens College, CUNY, 65-30 Kissena Boulevard, Flushing, NY 11367-1597. *Some geometrical properties of the Teichmüller space of a Riemann surface rel a closed subset.* Preliminary report.

Let X be a hyperbolic Riemann surface (i.e. its universal covering surface is isomorphic to the upper half plane). Let E be a closed subset of X. The Teichmüller space of X rel E, denoted by $T(X, E)$, was first studied by Adam Epstein in his doctoral dissertation.

In this talk, we will discuss some geometrical properties of the space $T(X, E)$. We will show that the Teichmüller metric on $T(X, E)$ is the same as its Kobayashi metric. We will then discuss how to extend Earle's sharp form of the principle of Teichmüller contraction to the space $T(X, E)$, and obtain a δ, ϵ form of Schwarz's lemma for holomorphic maps from the open unit disk to $T(X, E)$.

There is also a Teichmüller curve of X rel E, denoted by $V(X, E)$; we will discuss some properties of the "simple holomorphic family" $V(X, E) \to T(X, E)$ and outline an application to holomorphic motions. (Received December 30, 2007)