1027-32-168 **Sudeb Mitra*** (sudeb.mitra@qc.cuny.edu), Department of Mathematics, Queens College, CUNY, 65-30 Kissena Boulevard, Flushing, NY 11367-1597. *Some metric 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 metric properties of $T(X, E)$. We will show that the Teichmüller metric on $T(X, E)$ is the same as its Kobayashi metric. In particular, we will discuss how to extend Earle's sharp form of Teichmüller contraction to $T(X, E)$. The Hamilton-Krushkal-Reich-Strebel condition for extremality for $T(X, E)$ then follows. If time permits, we will discuss the Teichmüller curve of X rel E, denoted by $V(X, E)$, and show some applications to holomorphic motions. (Received February 26, 2007)