

1027-32-168

**Sudeb Mitra\*** ([sudeb.mitra@qc.cuny.edu](mailto: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)