1003-58-579   **Adrian Constantin** and **Thomas Kappeler*** (`tk@math.unizh.ch`), Institute of Mathematics, University of mZurich, Winterthurerstr 190, 8057 Zurich, Switzerland, and **Boris Kolev** and **Peter Topalov**. *On geodesic exponential maps of the Virasoro group.*

We study the geodesic exponential maps corresponding to Sobolev type right-invariant(weak) Riemannian metrics $g(k)$ ($k = 0, 1, ...$) on the Virasoro group Vir and show that for $k = 2, 3, 4,...$, but not for $k = 0, 1$, each of them defines a smooth Frechet chart of the unital element in Vir.The geodesic exponential map for $k = 0$ corresponds to the KdV equation and hence is not a local diffeomorphism near the origin. (Received September 23, 2004)