Erratum

(*Proc. Indian Acad. Sci.* (*Math. Sci.*), Vol. 111, No. 4, November 2001, pp. 407–414)

A variational proof for the existence of a conformal metric with preassigned negative Gaussian curvature for compact Riemann surfaces of genus > 1

RUKMINI DEY

Section 1 second paragraph should read: we minimize the functional

$$S(\sigma) = \int_M (K(\sigma) - K)^2 e^{2\sigma} d\mu$$

over $W^{2,2}(M) \ldots$. Using Sobolev embedding theorem we show that $S(\sigma)$ takes its absolute minimum on $W^{2,2}(M)$ which corresponds to a C^∞ metric on M of negative curvature K.

Section 2.1 should read: The functional $S(\sigma) = \int_M (K(\sigma) - K)^2 e^{2\sigma} d\mu$ is non-negative on $W^{2,2}(M)$, so that its infimum

$$S_0 = \inf\{S(\sigma), \sigma \in W^{2,2}(M)\}$$

exists and is non-negative. Let $\{\sigma_n\}_{n=1}^\infty \subset W^{2,2}(M)$ be a corresponding minimizing sequence,

$$\lim_{n\to\infty} S(\sigma_n) = S_0.$$

Our main result is the following

Theorem 0.1. *Let M be a compact Riemann surface of genus $g > 1$. The infimum S_0 is attained at $\sigma \in C^\infty(M)$, i.e., the minimizing sequence $\{\sigma_n\}$ contains a subsequence that converges in $W^{2,2}(M)$ to $\sigma \in C^\infty(M)$ and $S(\sigma) = 0$. The corresponding metric $e^\sigma h dz \otimes d\bar{z}$ is the unique metric on M of negative curvature K.*

Section 3, proof of the proposition (3.1) should read: $\ldots$ Set $G(t) = S(\sigma + t\beta) - S_0$, where $\beta \in W^{2,2}(M) \ldots$.