

Meeting: 1006, Lubbock, Texas, SS 5A, Special Session on Recent Advances in Complex Function Theory

1006-30-226 **Leah J Cole*** (colel@wbu.edu), 1900 W. 7th Street CMB 236, Plainview, TX 79072, and **Roger W Barnard, Kent Pearce** and **G Brock Williams**. *A Sharp Bound on the Schwarzian Derivatives of Hyperbolically Convex Functions.*

In this paper we discuss our verification of Pommerenke's conjecture that $\sup_{0 \leq x < 1} (1 - x^2)S_{f_\alpha}(x)$ is achieved for $x = 0$, where S_{f_α} is the Schwarzian derivative of f_α . This was used in our verification of the Mejía/Pommerenke conjecture that a sharp bound on the Schwarz norm is obtained by a map of the form

$$f_\alpha(z) = \tan \left(\alpha \int_0^z (1 - 2\xi^2 \cos 2\theta + \xi^4)^{-\frac{1}{2}} d\xi \right),$$

where $\alpha = \frac{\pi}{2K(\cos \theta)}$, and K is the elliptic integral of the first kind. (Received February 15, 2005)