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John A Pfaltzgraff* (jap@email.unc.edu), 511 Caswell Rd., Chapel Hill, NC 27514. *Loewner theory and Schwarzians in \mathbb{C}^n .*

The theory of Loewner chains and preSchwarzian univalence criteria were generalized to higher dimensions in 1974-75. The problems of identifying what should play the role of Schwarzian derivative, $(f''(z)/f'(z))' - (1/2)(f''(z)/f'(z))^2$, and constructing appropriate L-chains in higher dimensions proved to be a difficult challenge and remained unsolved.

We now give solutions with the construction of appropriate L-chains for the higher dimensional theory involving Schwarzian invariants with n-Dim versions of the main Schwarzian univalence criteria of Nehari, Ahlfors, Becker, Epstein, etc. (including pi-squared criteria).

The talk will focus on

- (i) The new Loewner chains constructed for higher dimensional Schwarzian univalence criteria.
- (ii) What are the Schwarzian invariants and how can they be derived with a Cartan matrix tool in projective space? (Received August 12, 2009)