1051-30-236 **Eric D Schippers*** (`eric_schippers@umanitoba.ca`), Department of Mathematics, Machray Hall, 186 Dysart Rd, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada. *Derivative of the Nehari functional.*

Nehari invented a method of producing inequalities in function theory through the use of the Dirichlet principle. In this talk, we focus on the case bounded univalent functions. In one formulation of Nehari's method, given a quadratic differential which is a perfect square, and for which the boundary of the disk is a trajectory, the result is an inequality which is sharp for mappings admissible for this quadratic differential.

We give an expression for the functional derivative of Nehari's functional, using the Loewner method and the power matrix. At an extremal function, the functional derivative has a simple expression in terms of the pull-back of the original quadratic differential. (Received August 25, 2009)