© 2007 Heldermann Verlag

**Darren G. Crowdy and Jonathan S. Marshall**

**Computing the Schottky-Klein Prime Function on the Schottky Double of Planar Domains**

CMFT 7 No.1 (2007), 293–308. [ISSN 1617-9447]

**Abstract.** A numerical algorithm is presented for the computation of the Schottky-Klein prime function on the Schottky double of multiply connected circular domains in the plane. While there exist classical formulae for the Schottky-Klein prime function in the form of infinite products over a Schottky group, such products are not convergent for all choices of multiply connected circular domains. The prime function itself, however, is a well-defined function for any multiply connected circular domain. The present algorithm facilitates the evaluation of this prime function when the planar domains are such that the classical infinite product representation is either not convergent or so slowly convergent as to be impracticable.

**Keywords.** Schottky-Klein prime function, Schottky double, multiply connected.

**2000 MSC.** 30F10, 30F15.

**Received.** August 3, 2006, in revised form December 6, 2006.