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LETTER TO

The absence of local hopping conduction

M Saglam and
Department of Th

Received 24 Mar

Abstract. The qu
polarons in a pol
to the dipolar pot
field appearing in

Recently, there has been s
should exist in small polar
determining the dielectric c
man *et al* 1953, Kartheuse
the small polaron hopping
were considered as a poss
fitting the electric field de
metal-ion glasses (Austin a
of this effect (Munn 1972).
an explanation of this disc
or inhomogeneities (Austi

A full quantum mecha
dielectric constant includi
1963). It is shown that the
the motion of the electron
the motion from atom to
correction. However, this
transport in the hopping
local field does not contri
latter quantity depends o
jump. Because of this, the s
at the two sites cancel in
the outer surfaces of the s
energy difference, when a
electric field, unmodified

For details of the sm
papers on this subject (H
present investigation, it