On Dini derivatives of real functions

By ALESSANDRO FONDA (Trieste), GIULIANO KLUN (Trieste)
and ANDREA SFECCI (Trieste)

Abstract. For a continuous function f, the set V_f made of those points where the lower left derivative is strictly less than the upper right derivative is totally disconnected. Besides continuity, alternative assumptions are proposed so to preserve this property. On the other hand, for any given totally disconnected closed set A, we construct a function f whose set V_f coincides with the entire domain, and f is continuous on A.

ALESSANDRO FONDA &
ANDREA SFECCI
DIPARTIMENTO DI MATEMATICA
E GEOSCIENZE
UNIVERSITÀ DI TRIESTE
P.LE EUROPA 1
I-34127 TRIESTE
ITALY

GIULIANO KLUN
SCUOLA INTERNAZIONALE SUPERIORE
DI STUDI AVANZATI
VIA BONOMEA 265
I-34136 TRIESTE
ITALY