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Hajrudin Fejzic* (hfejzic@csusb.edu), Department of Mathematics, CSUSB, San Bernardino, CA 92407. *On Peano derivatives in several variables.*

Let f be a function of several variables that is n times Peano differentiable. A. Fischer proved that if there is a number $M > 0$ such that all Peano partials of order n are less than M or they are all greater than $-M$ then f is n times ordinarily differentiable. Here this result is improved to permit the possibility that some of the Peano partials are bounded from above by M while others are bounded from below by $-M$. Also as a consequence we obtain some new results about the equality of mixed partial derivatives. (Received July 29, 2015)