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1003-13-769 **Josep Alvarez-Montaner** and **Gennady Lyubeznik*** (gennady@math.umn.edu), Department of Mathematics, University of Minnesota, 206 Church Street, S.E., Minneapolis, MN 55455, and **Manuel Blickle**. *A surprising fact about D -modules in characteristic $p > 0$.*

Let $R = k[x_1, \dots, x_d]$ or $R = k[[x_1, \dots, x_d]]$ be either a polynomial or a formal power series ring in a finite number of variables over a field k of characteristic $p > 0$ and let D be the ring of k -linear differential operators of R . In this paper we prove that if f is a non-zero element of R then R_f , obtained from R by inverting f , is generated as a D -module by $\frac{1}{f}$. This is an amazing fact considering that the corresponding characteristic zero statement is very false. In fact we prove an analog of this result for a considerably wider class of rings R and a considerably wider class of D -modules. (Received September 29, 2004)