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**W. Frank Moore\*** (fmoore@math.unl.edu), Department of Mathematics, University of Nebraska - Lincoln, Lincoln, NE 68588. *Cohomology over Fiber Products of Local Rings.*

Let  $S$  and  $T$  be local rings with common residue field  $k$ , let  $R$  be the fiber product  $S \times_k T$ , and let  $M$  be an  $S$ -module. The Poincaré series  $P_M^R$  of  $M$  has been expressed in terms of  $P_M^S$ ,  $P_k^S$  and  $P_k^T$  by Kostrikin and Shafarevich, and by Dress and Krämer. We give theorems on the structure of  $\text{Ext}_R(k, k)$  and  $\text{Ext}_R(M, k)$  that illuminate these equalities. We also describe the structure of  $\text{Ext}_R(N, k)$  as a graded  $\text{Ext}_R(k, k)$ -module when  $N$  is an  $R$ -module. (Received March 06, 2006)