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**Simplice Tchamna\*** (tchamna@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, P.O. Box 30001, Department 3MB, Las Cruces, NM 88003-8001. *The Ideal Completion of a Noetherian Local Domain.*

The ideal topology on a commutative ring  $R$  is the topology which has a fundamental system of neighborhoods of 0 the nonzero ideals of  $R$ . Matlis used the ideal topology in his studies of torsion-free and cotorsion modules. We investigate the properties of the ideal topology on a Noetherian local domain  $(R, m)$ , and we establish connections between the  $m$ -adic topology and the ideal topology. We will present the relations between the ideal completion and the  $m$ -adic completion of a local Noetherian domain. In particular, we will discuss the properties satisfied by one completion and not the other. We give conditions under which the completion in the ideal topology is Noetherian and we show that unlike the  $m$ -adic completion, the completion in the ideal topology is not always Noetherian. (Received August 30, 2012)