1128-13-175 **Craig Huneke**, **Srikanth Iyengar** and **Roger Wiegand*** (rwiegand1@unl.edu), Department of Mathematics, University of Nebraska, Lincoln, NE 68588-0130. *Rigid ideals in one-dimensional Gorenstein domains.* Preliminary report.

An R-module M is said to be *rigid* provided every self-extension of M splits, that is, $\mathrm{Ext}^1_R(M,M)=0$. Suppose that R is a local Gorenstein domain of dimension one. In this context, there are no known examples of rigid ideals, except the obvious ones—principal ideals. We conjecture, at least when R is a complete intersection domain of dimension one, that rigid ideals must be principal. This is closely related to a conjecture (still open) from the early nineties, by Huneke and Wiegand: If M is a finitely generated module over a local domain (of any dimension), and if $M \otimes_R M^*$ (where $M^* = \mathrm{Hom}_R(M,R)$) is a maximal Cohen-Macaulay (MCM) module, then M must be free. (A finitely generated torsion-free module M over a one-dimensional local Gorenstein domain is rigid if and only if $M \otimes M^*$ is MCM (equivalently, torsion-free).)

In this talk I will report some positive results and also mention a place to look for possible counterexamples. (Received February 24, 2017)