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Denise Amanda Rangel* (denise.rangel@mavs.uta.edu). *Totally Reflexive Modules and the AR-translate*. Preliminary report.

For (R, \mathfrak{m}) a communicative local ring, we consider totally reflexive modules T over R and τ the Auslander-Reiten (AR) translate. We show that if $\tau(T)$ is a totally reflexive module, then R is Gorenstein provided $\mathfrak{m}^3 = 0$. We will also investigate other means of potentially constructing AR-sequences, as well as other aspects of the AR-translate. (Received September 17, 2013)