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**Mohsen Gheibi\***, University of Nebraska-Lincoln, Department of Mathematics, 203 Avery Hall, Lincoln, NE 68588-0130, and **Ryo Takahashi** ([takahashi@math.nagoya-u.ac.jp](mailto:takahashi@math.nagoya-u.ac.jp)), Graduate School of Mathematics, Nagoya University, Nagoya, 464-8602, Japan. *Totally reflexive modules and Poincaré series.*

In this talk, we describe the Bass series of a Cohen-Macaulay local ring  $R$  that admits a specific totally reflexive module. More precisely, we show that the Bass series of  $R$  is rational. We also give a description of the Poincaré series of  $k$  by using the Poincaré series of the totally reflexive module. (Received July 17, 2017)