1147-13-497 **Hiroki Matsui*** (orj.112mh@gmail.com), Chikusa-ku, Furo-cho, Nagoya, Aichi 464-8601, Japan.

On tensor products which are syzygy modules.

This talk is based on joint work with Olgur Celikbas.

Let R be a hypersurface local ring and M, N be non-zero finitely generated R-modules such that $M \otimes_R N$ is an nth syzygy module for some integer $n \geq 2$. As an immediate consequence of Huneke-Wiegand's second rigidity theorem, if M has finite projective dimension, then N is an nth syzygy module.

The aim of this talk is to improve this result using n-Tor-rigid modules. Here, a finitely generated R-module is said to be n-Tor-rigid if the vanishing of n consecutive Tor's implies the vanishing of all higher Tor's. Notice that if a finitely generated R-module has finite projective dimension, then it is (1-)Tor-rigid. One of the important points in this talk is the fact that every regular element for a given Tor-rigid module is regular for R. Moreover, I will give some applications of the main theorem as time permits. (Received January 24, 2019)