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**Ken-ichi Yoshida\*** (yoshida@math.chs.nihon-u.ac.jp). *Lower bound of Hilbert-Kunz multiplicities.*

This is a joint work with Kei-ichi Watanabe and Ilya Smirnov (Stockholm).

Throughout this talk, let  $k$  be algebraically closed field of characteristic  $p > 0$ , and let  $A$  be a Noetherian local ring of dimension  $d \geq 2$  which contains  $k$ . We give a lower bound on Hilbert-Kunz multiplicities for higher-dimensional Cohen-Macaulay local rings. Also, we study the difference  $e_{HK}(I) - e(I)/2$  for 2-dimensional F-regular local rings. (Received January 25, 2019)