

**HIROSHI NAGASE**  
**Osaka City University**

*Relative Hochschild cohomology and smoothness (25-30 min)*

We consider a relationship between algebra homomorphisms and the relative Hochschild cohomology. We give a definition of smoothness of algebra homomorphisms in the case of non-commutative algebras. It is shown under an assumption that an algebra homomorphism is smooth if and only if the first relative Hochschild cohomology vanishes.