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Constantin Dorin Dumitraşcu* (dumitras@math.arizona.edu). *Asymptotic morphisms and extensions of C^* -algebras (after V. Manuilov and K. Thomsen).*

In 1990, Connes and Higson introduced a construction that associates to an extension of C^* -algebras, $0 \rightarrow B \rightarrow E \rightarrow A \rightarrow 0$, an asymptotic morphism from SA to B . This is a fundamental example in E -theory. The extent to which it provides a bijective correspondence between extensions of A by B and asymptotic morphisms was clarified by Manuilov and Thomsen in 2001. They introduced the notion of semi-invertible extension, and their result is that all the extensions are semi-invertible provided that A is a suspension C^* -algebra, $A = SD = C_0(\mathbb{R}) \otimes D$. In a subsequent paper, Manuilov and Thomsen show the existence of extensions that are not semi-invertible, and even that are not invertible up to homotopy. They do so by modifying an example of S. Wassermann based on property T groups, that first appeared in the context of non-exact C^* -algebras. In our presentation we focus on this particular example, on the concept of semi-invertibility, and on the key use of asymptotic morphisms in the arguments. This is mostly an expository talk. (Received September 20, 2007)