

# **F-Signature and Relative Hilbert-Kunz Multiplicity**

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The F-signature and Hilbert-Kunz multiplicity of a local ring are among a number of numerical invariants defined via Frobenius in positive characteristic. After introducing these so-called F-invariants, we will sketch a partial answer to a question of Watanabe and Yoshida by showing that the F-signature and relative Hilbert-Kunz multiplicity (for cyclic modules) coincide. The method of proof also suggests a number of generalizations of both invariants that will be described as time allows.