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*A direct limit for limit Hilbert-Kunz for smooth projective curves*

We investigate a case when a more naive limit turns out to give the limit Hilbert Kunz multiplicity, namely that of ideals in the affine cone of smooth nonsingular curves. The proof involves more careful estimates of bounds found independently by Brenner and Trivedi on the ranks of the cohomologies of twists of the syzygy bundle as the characteristic  $p$  goes to infinity. This is joint work with Holger Brenner and Jinjia Li.