The first Hilbert coefficient and the reduction number of stretched ideals

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The homological property of the associated graded ring of an ideal is an important problem in commutative algebra. In this talk we explore the structure of the associated graded ring of stretched $\mathfrak{m}$-primary ideals in the case where the reduction number attains almost minimal value in a Cohen-Macaulay local ring $(A, \mathfrak{m})$. In the second half of this talk, We also present the structure of stretched $\mathfrak{m}$-primary ideals with small first Hilbert coefficient.

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