

PROPERTIES OF THE FIBER CONE

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Given a Noetherian local ring (R, \mathfrak{m}) and an ideal I in R , there is a natural filtration $\dots \subseteq I^2 \subseteq I \subseteq R$, called adic-filtration. One may construct a graded algebra $F(I) = \bigoplus_{n \geq 0} I^n / \mathfrak{m}I^n$, called fiber cone or special ring. Moreover, naturally it is possible to generalize this algebra by using any filtration of ideals $\mathfrak{F} : \dots \subseteq I_2 \subseteq I_1 \subseteq R$. It is denoted by $F(\mathfrak{F})$. The goal of this talk is to speak about the Gorenstein property of $F(\mathfrak{F})$ and its Castelnuovo-Mumford regularity.

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