Régularisation du calcul de bases de Gröbner
pour des systèmes avec poids et déterminantiel,
et application en imagerie médicale
(erratum)

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1 Algebra and geometry

• Def. 1.13: the map $\phi^h$ is not a morphism. For a counter-example, in $\mathbb{K}[X]$, consider $f = X^2 + X, g = -X^2 + X$, then $f^h = X^2 + XH, g^h = -X^2 + XH$, and $f^h + g^h = 2XH$. But $f + g = 2X$ is homogeneous, so $(f + g)^h = 2X$.

What is always true is that $f^h + g^h = H^k(f + g)^h$ for some $k \in \mathbb{N}$, and that $(cf)^h = cf^h$ if $c \in \mathbb{K}$.

• Def. 1.77: the open subset $U$ contains $x$.

2 Gröbner bases

• Proof of Prop. 2.16, item 3: if $NF(f) - NF(g) = 0$, then $NF(f) - NF(g) \in I$ so $f - g \in I$.

3 Weighted homogeneous systems

4 Real roots classification for determinants – Application to contrast optimization

• Proof of Prop. 4.2, 4 lines after Eq. 4.5: a subideal of a radical ideal may not be radical, since any ideal is included in its radical. The correct observation is that the ideal defined by the entries of $M/A$ is the localization at $\Delta$ of the ideal generated by all $(r_i+1)$-minors of $M$. Taking radicals commutes with localization, hence this ideal is radical assuming hypothesis $\mathcal{H}6$. 

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