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

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## 1 Algebra and geometry

- **Def. 1.13:** the map $\bullet^h$ 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 $\mathbf{x}$.

## 2 Gröbner bases

- **Proof of Prop. 2.16, item 3:** if $\mathsf{NF}(f) - \mathsf{NF}(g) = 0$, then $\mathsf{NF}(f) - \mathsf{NF}(g) \in I$ 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 $(r_1+1)$-minors of $M$. Taking radicals commutes with localization, hence this ideal is radical assuming hypothesis $\mathcal{H}6$.