Reminder II

- Characterisation of $T \in \mathcal{D}'(\mathbb{R}^n)$,
- Derivative of distributions : $\forall T \in \mathcal{D}'(\mathbb{R}^n)$,

$\forall \varphi \in \mathcal{D}(\mathbb{R}^n)$, $\forall \alpha \in \mathbb{N}^n$, $[\partial^\alpha T](\varphi) := (-1)^{|\alpha|} \, T(\partial^\alpha \varphi)$.

$\rightsquigarrow$ $\partial^\alpha T \in \mathcal{D}'(\mathbb{R}^n)$, and $\partial^\alpha T_h = T_{\partial^\alpha h}$,

In the sense of distribution, any $h \in L^1_{loc}(\mathbb{R}^n)$ is differentiable

- $\partial T_H = \delta_0$ $\quad \partial T_{\ln(|x|)} = P_v \frac{1}{x}$ ...
- Local structure theorem,
- Multiplication of distributions by smooth functions,
- Convergence in $\mathcal{D}'(\mathbb{R}^n)$
- Approximation of δ_0 by regular distributions.

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