**ERRATA and ADDITIONS: Outline of the lectures on Distributions and Integral Operators Academic Year 2018/19, updated March 16, 2019**

**p. 21, line 5 of Theorem 2.2.2:** Please replace
    The map $\mathcal{J}f$
by
    The map $\mathcal{J}$

**p. 22, end of section 2.2:** Please add:
    We also state the following, which we do not prove. For a proof, we refer to Treves [?].

**Proposizione 0.0.1** *Let $\Omega$ be an open subset of $\mathbb{R}^n$. Let $\{u_j\}_{j\in\mathbb{N}}$ be a sequence in $\mathcal{D}'(\Omega)$ which converges to $u \in \mathbb{K}^{\mathcal{D}(\Omega)}$ pointwise, i.e.,*

$$\lim_{j\to+\infty} < u_j, \varphi >=< u, \varphi > \qquad \forall \varphi \in \mathcal{D}(\Omega)\,.$$

*Then $u \in \mathcal{D}'(\Omega)$ and $\{u_j\}_{j\in\mathbb{N}}$ converges to $u$ in $\mathcal{D}'_s(\Omega)$.*

**p. 33, line 6 to bottom:** replace
    $\mathrm{supp}\,\varphi \subseteq \Omega_1$
by
    $\overline{\mathbb{B}_n(x_0, \epsilon_0)} \cup \mathrm{supp}\,\varphi \subseteq \Omega_1$

**p. 43, statement (ii) of Proposition 2.11.3:** Please replace
    If $m \in \mathbb{N}$ and if $\beta \in \mathbb{N}^n$ and $|\beta| \leq m$
by
    If $m \in \mathbb{N}$, and if $\alpha \in C^m_c(\mathbb{R}^n)$ and if $\beta \in \mathbb{N}^n$ and $|\beta| \leq m$

**p. 55, formula in display line 3 to bottom:** Please replace
    $\forall x \in \mathbb{R}^n$
by
    $\forall x \in \mathbb{R}^n \setminus \{0\}$

**p. 54, line 2 of Theorem 2.14.1:** Please replace
    , then
by

which is not identically equal to 0, then

**p. 60, line 2:** Please replace

and that

by

and that

$$D^{e_j} S_n(x) = \frac{1}{s_n} \frac{x_j}{|x|^n} \qquad \forall x \in \mathbb{R}^n \setminus \{0\} ,$$

defines a locally integrable function in $\mathbb{R}^n$ and that

**p. 100, end of the page, please add:**

**Exercise 0.0.2** Let $m \in \mathbb{N}$. Let $c_\alpha \in \mathbb{C}$ for all $\alpha \in \mathbb{N}^n$ such that $|\alpha| \leq m$. Then the distribution $\sum_{|\alpha| \leq m} c_\alpha D^\alpha \delta_0$ is positively homogeneous of degree $h \in ]-n, +\infty[$ if and only if $c_\alpha = 0$ for all $\alpha \in \mathbb{N}^n$ such that $|\alpha| \leq m$.

**Solution.** The sufficiency is obvious. We now prove the necessity of the condition and thus we assume that

$$t^h \left[ \sum_{|\alpha| \leq m} c_\alpha D^\alpha \delta_0 \right] = h_t \left[ \sum_{|\alpha| \leq m} c_\alpha D^\alpha \delta_0 \right] \qquad \forall t \in ]0, +\infty[ .$$

Since $D^\alpha \delta_0$ is positively homogeneous of degree $-n - |\alpha|$, we have

$$t^h \left[ \sum_{|\alpha| \leq m} c_\alpha D^\alpha \delta_0 \right] = \sum_{|\alpha| \leq m} c_\alpha h_t [D^\alpha \delta_0] = \sum_{|\alpha| \leq m} c_\alpha t^{-n-|\alpha|} D^\alpha \delta_0 \qquad \forall t \in ]0, +\infty[ ,$$

and thus

$$\sum_{|\alpha| \leq m} c_\alpha (t^h - t^{-n-|\alpha|}) D^\alpha \delta_0 = 0 \qquad \forall t \in ]0, +\infty[ .$$

Hence,

$$c_\alpha (t^h - t^{-n-|\alpha|}) = 0 \qquad \forall t \in ]0, +\infty[ ,$$

for all $\alpha \in \mathbb{N}^n$ such that $|\alpha| \leq m$ and accordingly

$$c_\alpha (t^{h+n+|\alpha|} - 1) = 0 \qquad \forall t \in ]0, +\infty[ ,$$

for all $\alpha \in \mathbb{N}^n$ such that $|\alpha| \leq m$. Since $h > -n$, we can take the limit as $t$ tends to 0 conclude that $c_\alpha = 0$ for all $\alpha \in \mathbb{N}^n$ such that $|\alpha| \leq m$. $\square$