Notation

Let Ω be an open set of $\mathbb{R}^N$, $1 \le p < +\infty$, $k, N \in \mathbb{N}$, $0 < \alpha < 1$, $T > 0$, $a < b$.

$\lvert x\rvert$	euclidean norm of $x \in \mathbb{R}^N$;
$\langle x, y\rangle$	euclidean inner product in $\mathbb{R}^N$;
$B(x, r)$	open ball in $\mathbb{R}^N$ centered in x with radius $r > 0$;
B_r	$B(0, r)$;
Q	$(0, T) \times \Omega$;
$\partial' Q$	$(0, T) \times \partial\Omega \cup \{0\} \times \overline{\Omega}$;
$\partial_{tx} Q$	$\{0\} \times \partial\Omega$;
$\operatorname{card} J$	cardinality of a given set J;
$\lvert J\rvert$	Lebesgue measure of a given set J;
J^c	complementary set of J;
χ_J	characteristic function of a set J, that is the function defined as $\chi_J(x) = 1$ if $x \in J$ and $\chi_J(x) = 0$ if $x \notin J$;
$\mathbb{1}$	characteristic function of $\mathbb{R}^N$;
$\operatorname{supp} u$	support of a given function u;
D_t	partial derivative with respect to the variable t;
D_i	partial derivative with respect to x_i;
D_{ij}	$D_{x_i x_j}$;
Du	space gradient of a real-valued function u with norm $\lvert Du\rvert^2 = \sum_{i=1}^{N} (D_i u)^2$;
$D^2 u$	Hessian matrix of a real-valued function u with respect to the space variables with norm $\lvert D^2 u\rvert^2 = \sum_{i,j=1}^{N} (D_{ij} u)^2$;
$C_c^\infty(\Omega)$	space of real-valued C^∞ functions with compact support in Ω;
$C_b(\overline{\Omega})$	space of bounded continuous functions in $\overline{\Omega}$;

$C_b^k(\overline{\Omega})$	space of real-valued functions with derivatives up to order k in $C_b(\overline{\Omega})$;
$C_0(\Omega)$	space of functions in $C_b(\overline{\Omega})$ vanishing at $\partial\Omega$ and at infinity;
$C_0(\mathbb{R}^N)$	space of functions in $C(\mathbb{R}^N)$ vanishing at infinity;
$C^1(\mathbb{R}^N;\mathbb{R}^N)$	space of functions $F = (F_1, ..., F_N)$ such that $F_i \in C^1(\mathbb{R}^N)$, for every i;
$C^{1,2}((a,b)\times\Omega)$	space of functions $u(t,x)$ which are continuous in $(a,b)\times\Omega$ with their indicated derivatives (not necessarily bounded);
$C^{k+\alpha}(\Omega) = C^{k+\alpha}(\overline{\Omega})$	space of functions such that the derivatives of order k are α-Hölder continuous in Ω;
$C^{1+\alpha/2,2+\alpha}((a,b)\times\Omega)$ $= C^{1+\alpha/2,2+\alpha}([a,b]\times\overline{\Omega})$	space of functions $u = u(t,x)$ such that $D_t u$ and $D_{x_ix_j}u$ are α-Hölder continuous in $(a,b)\times\Omega$ with respect to the parabolic distance $d\big((t,x),(s,y)\big) = \lvert t-s\rvert^{1/2} + \lvert x-y\rvert$;
$C^{1+\alpha/2,2+\alpha}_{\rm loc}((0,+\infty)\times\overline{\Omega})$	space of functions u such that $u \in C^{1+\alpha/2,2+\alpha}([\varepsilon,T]\times\overline{\Omega}')$, for all $0<\varepsilon<T$ and bounded open $\Omega' \subseteq \Omega$;
$C^{1+\alpha}_{\rm loc}(\overline{\Omega})$	space of the functions which belong to $C^{1+\alpha}(\overline{\Omega}')$, for all bounded open set $\Omega' \subseteq \Omega$;
$C^k(\overline{\mathbb{R}})$	space of continuous functions with finite limits at $\pm\infty$ together with their derivatives up to order k;
$\lVert\cdot\rVert_\infty$	sup-norm;
$\lVert u\rVert_{[a,b]}$	$\sup_{x\in[a,b]} \lvert u(x)\rvert$;
$\lVert u\rVert_{C^{\frac{\alpha}{2},\alpha}(]0,T[\times\Omega)}$	$\lVert u\rVert_\infty + [u]_{C^{\frac{\alpha}{2},\alpha}(]0,T[\times\Omega)}$;
$[u]_{C^{\frac{\alpha}{2},\alpha}(]0,T[\times\Omega)}$	$\displaystyle\sup_{\substack{t\in]0,T[,\\ x,y\in\Omega,\\ x\neq y}} \frac{\lvert u(t,x)-u(t,y)\rvert}{\lvert x-y\rvert^\alpha} + \sup_{\substack{t,s\in]0,T[,\\ t\neq s,\\ x\in\Omega}} \frac{\lvert u(t,x)-u(s,x)\rvert}{\lvert t-s\rvert^{\frac{\alpha}{2}}}$;
$\lVert u\rVert_{1,2}$	$\lVert u\rVert_\infty + \lVert u_t\rVert_\infty + \lVert Du\rVert_\infty + \lVert D^2u\rVert_\infty$;
$[u]_{1+\frac{\alpha}{2},2+\alpha}$	$[u_t]_{\frac{\alpha}{2},\alpha} + [D^2u]_{\frac{\alpha}{2},\alpha}$;
$\lVert u\rVert_{1+\frac{\alpha}{2},2+\alpha}$	$\lVert u\rVert_{1,2} + [u]_{1+\frac{\alpha}{2},2+\alpha}$;
$(L^p(\Omega), \lVert\cdot\rVert_p)$	usual Lebesgue space;
$(W^{k,p}(\Omega), \lVert\cdot\rVert_{k,p})$	usual Sobolev space;
$W^{k,p}_{\rm loc}(\Omega)$	space of functions belonging to $W^{k,p}(\Omega')$ for all bounded open set Ω' such that $\overline{\Omega'} \subset \Omega$;
$W^{k,p}_0(\Omega)$	closure of $C_c^\infty(\Omega)$ in $W^{k,p}(\Omega)$;
$\mathcal{M}(\mathbb{R}^N)$	set of all Borel probability measures in $\mathbb{R}^N$.