?
D
2
D
D
$L^2(D)$
D
${}^2(D) =$
$\{u(x) :$
$\int_D |u|^2 dx <$
$\infty\}. <$
$u, v >=$
$\int_D u(x)\overline{v(x)}dx, \|u\|_{L^2(D)} =<$
$u, u >^{1/2}$
$. \geq$
0
$H^d(D)$
${}^d(D) =$
$\{u(x) :{}^u \in$
$L^2(D), || \leq$
$d\}, {}_{1,2})$
$1,2$
D
$H^1(D)$
$\|u\|_{H^1(D)} =$
$(\|\phi\|^2_{L^2(D)} +$
$d_D^{-2}\|\phi\|^2_{L^2(D)})^{1/2}, {}_D$
D
$H^{1/2}({}_D)$
${}^{1/2}({}_D) =$
$\{v(x) :$
$\|v\|_{L^2(\mathcal{D})} <$
$\infty, |v|_{\frac{1}{2},\mathcal{D}} <$
$\infty\}, |v|_{\frac{1}{2},\mathcal{D}} =$
$\left(\int_{\mathcal{D}}\int_{\mathcal{D}} \frac{|v(x)-v(y)|^2}{|x-y|^2} ds(x)ds(y)\right)^{1/2}. {}^{1/2}({}_D)$
$\|v\|_{H^{1/2}({}_D)} =$
$(d_D^{-1}\|v\|^2_{L^2({}_D)} +$
$|v|^2_{\frac{1}{2},{}_D})^{1/2}.[\mathbf{?}, corollary 3.1] D Lipschitz \phi \in$
$C^1(\bar{D})^2$
d_D
$C >$
0
$\|\phi\|_{H^{1/2}({}_D)} +$
$\|\sigma(\phi)\nu\|_{H^{-1/2}({}_D)} \leq$
$C \max_{x\in\bar{D}}(|\phi(x)| +$
$d_D|\phi(x)|).$
$L^{2,s}(\Omega)$
${}^{2,s}() =$
$\{v \in$
$L^2_{loc}() :$
$(1+$
$|x|^2)^{s/2} v \in$
$L^2()\}, \|v\|_{L^{2,s}()} =$
$\left(\int (1+|x|^2)^s |v|^2 dx\right)^{1/2}. Sobolev {}^{1,s}(), s \in$
${}^{1,s}() =$
$\{v(x) :$
$v(x) \in$
$L^{2,s}(), \nabla v(x) \in$
$L^{2,s}()\}, \|v\|_{H^{1,s}()} =$
$(\|v\|^2_{L^{2,s}(} +$
$\|\nabla v\|^2_{L^{2,s}()})^{1/2}.$
X
X^2
$X^{2\times 2}$
X
$X, X^2, X^{2\times 2}$
$\|\cdot\|_X$
$c \in$
$[a, b]$
$f(x)$
$>$
0
$f(x)$
$(a, c-)$
$(c+, b)$