

The flow induce in generation of substantial surface forces acting on the blk flow.

st nct v x t x t n t n n sc
s ts st ng c ns t t yn c c ss s nt
nt x c y s x t t n s nt
s s -2 n x c nt
nts t t s g x s t s s st t s
s ts n n nc t ns t t g n n sc
c y c nn s' t t s g n c
s nt t t t c ct ns s nt n
s n y c n t n -4 s g x s
s n y n n x st t n x nt x c yn c
t s An t ct ss c t t x t n
x nt x c y s n y t t c nt
n n s s s x c t ns n -

$\mathbf{f}^c$ $\backslash$ ng c nt ct n s s nt, t yn c
s c c t ns n cts n c st t s $\backslash$ s n t
n nc c t c nt ct ng $\theta_d \mathbf{u}_c$ c  n
t $\backslash$ ng c s c c n t s s st t n t
 $\backslash$ c ty c t t s c nt ct n / $\mathbf{u}_c$ $^-$

$\text{nt}^{-x} \text{c}^{-x} \quad \text{t} \text{ n t} \quad \text{y} / \text{g} \setminus \text{n t} \quad \text{ngt} \text{ sc}^{-x}$
 $\text{t} \quad \text{nt}^{-x} \text{c} \quad \text{g n} \quad \text{n n} \quad \text{s}^2 / \text{c}$
 $\text{t} \text{ t} \quad \text{ct}^{-x} \text{s}^{-x} \text{c} \text{s} \quad 2^{-22} \quad \text{s} \quad \text{c} /$

c n t ns' n sy t t c n yss ^{-c}t ^ s
 ns n ss n t t s st n
 t t t ns ^{-c}t s ^{-c}c t ns n' s c nt t
 c t c n t ns t t s st t / st ^ t
 st nc l $\sqrt{\lambda\tau\sigma/\mu}$ n y t s ^{-c}c s
 t n t 24
 c ns g n c s ns n
 n n t c s ^{-c}n t y s t s t
 n y _k **x,z**) ^{-c}t n _k cc y
 t n n t c n t **x,z**) n On c n s
 t t n t s t²⁴/ t)) c n
 c t n t nn n y ^
 ^{-c}t t t n n n
 n n c s n t n n ns n
^{-c} /

$$\mathbf{\Delta p}^s - \xi^2 \mathbf{p}^s \quad , \quad \mathbf{x} \in \mathbb{R}^2 \setminus \bigcup_k$$

)

s y c ns ng s ng / t t n st ct s
 On g t ct t s / t t c s
 n n t s²⁴, t c n nc n t
 t t n g n s n y t t ξ
 s ns t Ca const t y ξ
 c s t t n s c c
 st c s n n ts ny c n nc
 n ξ On t t n / ct s s t
 t n s n n t s²⁴, n s
 s s c n nc s ts n n
 g nt s ξ On c n c y s
 t t t t n n n t t nc s
 s ξ c s s t n t t ct s t t s t
 ξ⁻ c g t n t ns n
 st c
 n c ns t ct c st c c
 n n st c s s ts s t ns
 s nt n g n c ns s c ct
 cts n c y t st c s t n n n s





