xtex (paper.dvi): Logical Page 7, Physical Page 7

Quit | Forward | Backward | Mark | Dup | Tied | Large | Small | Reopen | Goto

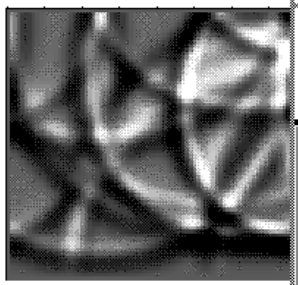


Figure 1: A few frogs hopped into the pond. Chirup! Frog [ER]

The velocity operator

For the velocity operator V we use Newton's equations stating that the of momentum change is the external momentum source minus the pressure

$$\rho \frac{\partial u}{\partial t} = s_u(x,y,t) - \frac{\partial p}{\partial x}$$
$$\rho \frac{\partial v}{\partial t} = s_v(x,y,t) - \frac{\partial p}{\partial y}$$

The spatial tiling we have chosen gives us two independent locations f density ρ, one atop the horisontal velocity u, the other at It may seem non physical to have one density for vertical for horisontal ones, but it is worth maintaining the two de Waves arise from many physical paradigms besides the a these may require that we maintain this possibility to intr way to introduce anisotropy in the present codes is to K in the pressure subroutine. These extra parameters r were trying to improve the numerical representation of Subroutine velocity() uses rhou(,) for $\Delta t/(\Delta x \rho)$ at u at v. Equation (15) in discrete form

$$u^{t}_{i+1} = s^{t}_{i} + u^{t}_{i} - \rho_{u}^{-1}(\Delta t/\Delta x)(p^{t+1}_{i}$$

appears in subroutine velocity() at the line beginning w

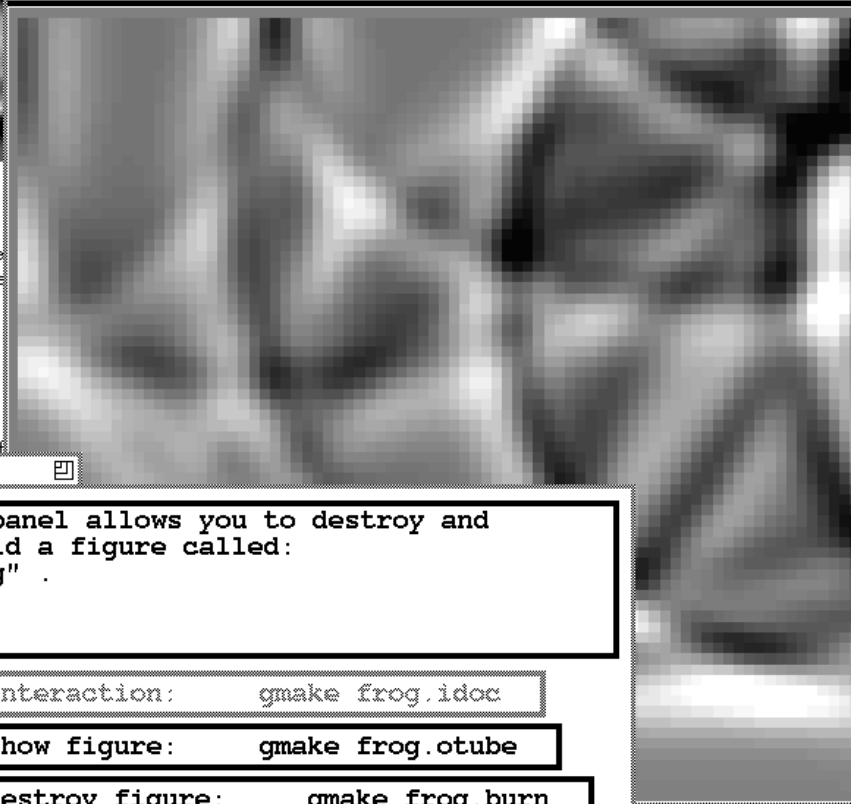
```
# Operator of momentum change from gradient of press
#
subroutine velocity( adj, add, rhou,rhov,  q,nx,ny,
integer              adj, add,               nx,ny,
real rhou(nx,ny), rhov(nx,ny), q(nx,ny,3), r(nx,ny,3
call        adjnull( adj, add,             q,nx*ny*3

do x= 2, nx-1 {
do y= 2, ny-1 {
```

SEP–89

xtpen

Next | Prev | Quit | Restart | Run | Stop | Rigid | Forwards

delay 1.00



xtpanel

This panel allows you to destroy and rebuild a figure called:
"frog" .

QUIT | interaction: gmake frog.idoc

show figure: gmake frog.otube

destroy figure: gmake frog.burn

rebuild figure: gmake frog.build

clean directory: gmake clean

ListDir: /home/oas/wrk3/sep89/jon1