



. 25
 Bidtek ()
 vision estimator
 Timberline Mc2
 Niche HCSS

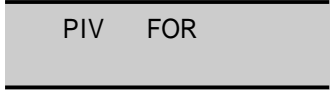
Particle Image Veloci-metry
 (PIV) (void
 ratio) Fiber
 Optic Reflectometer (FOR)

, PIV
 (sampling rate) 가

: Estimating: The Bottom line gets a
 gradual lift from technology
 : ()
 yhta@kict.re.kr

2. Particle Image Vel-
 ocimetry (PIV)

PIV

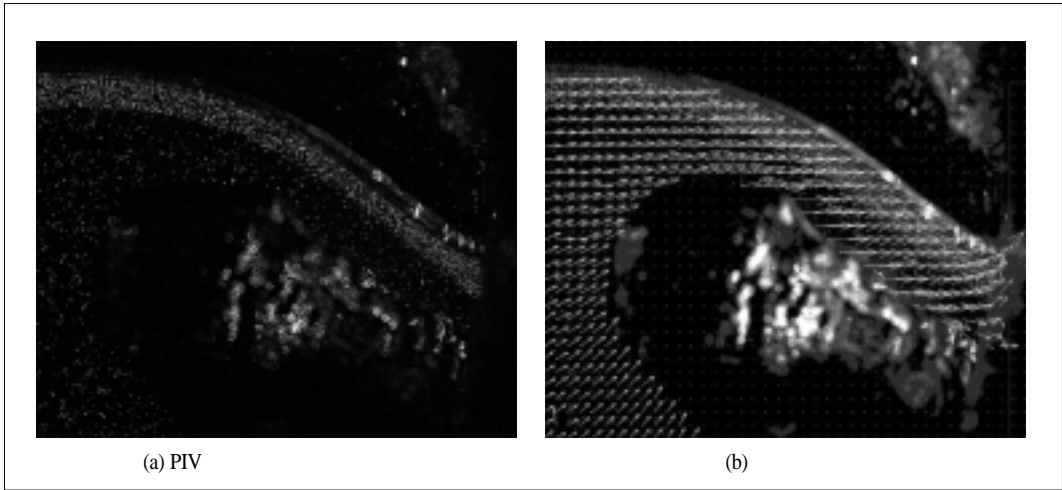


1.

가
 (wave breaking)

Laser
 Doppler Velocimetry (LDV)
 PIV
 PIV LDV
 (one point)
 (time series)

가
 가
 (cor-
 relation function)
 (image process-
 ing)
 (post processing)



1. PIV

(interpolation) 1 , PIV . FOR (fiber optic sensor)

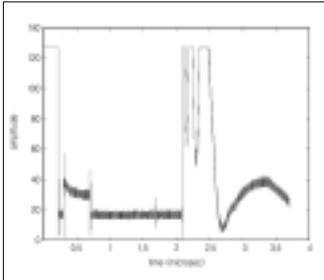
1(a) PIV 가 1(b)

3. Fiber Optic Reflectometer (FOR)

FOR

. FOR 125 micron

. FOR , diode laser,



2. FOR

coupler

2 FOR

. Amplitude

20 가
가 , 130

. FOR

가

가

(DOE)

: Dept. of Civil Eng., TEXAS A&M Univ.
(, Post-doc)
: ()
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17~42%

10 가 10%

1.

가

, Oklahoma

(Heat Pump)

Climate Master,

Florida Heat Pump, Trane,
Water Furnace

15

500