

3233467410-52415-18568-139-73

From: Marcia K McNutt <mcnutt@usgs.gov>
Sent: Wed, 4 Aug 2010 15:09:10
To: GS FOIA 0105 <foia0105@usgs.gov>
Subject: Fw: draft report - two notes from Omer

Dr. Marcia McNutt
Director
US Geological Survey
12201 Sunrise Valley Drive, MS 100
Reston, VA 20192
(703) 648-7411
(703) 648-4454 (fax)
(571) 296-6730 (cell)
mcnutt@usgs.gov
www.usgs.gov

----- Forwarded by Janet N Arneson/DO/USGS/DOI on 08/04/2010 03:08 PM -----

From: "wereley, Steven T." <wereley@purdue.edu>

To: Alberto Aliseda <aaliseda@u.washington.edu>, Franklin Shaffer
<Franklin.Shaffer@NETL.DOE.GOV>

Cc: "savas@newton.berkeley.edu" <savas@newton.berkeley.edu>,
"Bill.Lehr@noaa.gov" <Bill.Lehr@noaa.gov>, "'ira leifer'"
<ira.leifer@bubbleology.com>, "pete@gso.uri.edu" <pete@gso.uri.edu>,
"'Paul Bommer'" <pmbommer@mail.utexas.edu>, "Pedro I.' Espina"
<pedro.espina@nist.gov>, "'James J Riley'" <rileyj@u.washington.edu>,
Juan Lasheras <lsheras@ucsd.edu>, "'Marcia K McNutt'"

3233467410-52415-18568-139-73
<mcnutt@usgs.gov>

Date: 05/26/2010 01:18 PM

Subject: RE: draft report - two notes from Omer

I agree with Alberto that we may want to put some more in the way of technical detail into the report. I think the intended audience won't care about the details but some technical may look at this in order to brief others and they should be able see the technical details to know that we've thought about this and other issues.

Steve Wereley, Professor of Mechanical Engineering
Birck Nanotechnology Center, Room 2019, 1205 West State Street
Purdue University
West Lafayette, IN 47907
phone: 765/494-5624, fax: 765/494-0539
web page: <http://engineering.purdue.edu/~wereley>

From: Alberto Aliseda [mailto:aaliseda@u.washington.edu]
Sent: Wednesday, May 26, 2010 1:08 PM
To: Franklin Shaffer
Cc: savas@newton.berkeley.edu; Bill.Lehr@noaa.gov; 'ira leifer';

3233467410-52415-18568-139-73

pete@gso.uri.edu; 'Paul Bommer'; Pedro I.' 'Espina; Wereley, Steven T.;
'James J Riley'; Juan Lasheras; 'Marcia K McNutt'
Subject: Re: draft report - two notes from Omer

Hi Franklin, I think we should clarify that we are not doing PIV, but rather using PIV algorithms to obtain velocity measurements from the features on the surface of the jet (we are not really using natural contaminants). On that note, I am not sure I understand what is meant by depth-average entrainment velocity. Because we are measuring the surface of the jet with very limited resolution, we are measuring the velocity of large coherent structures that propagate at a different velocity than the centerline of the jet, but I would not call those phase speed. That seems to point to waves where the velocity measured is completely different from the velocity of fluid particles. That is not the case here.

Talk to you soon. Best,

Alberto

On May 26, 2010, at 9:59 AM, Franklin Shaffer wrote:

I agree that the various "PIV" techniques we are using are not strictly what engineers would call PIV.

But given that the audience will be the general public, I think calling this "PIV" is close enough.

Myself, I'm using a new "PIV" technique that does not use any correlation

methods such as those used in traditional double-pulse PIV.

Frank

<savas@newton.berkeley.edu> 5/26/2010 12:47 PM >>>

On the use PIV

While the technique is intended for flow fields that are carefully seeded with tracers, in its application here, it relies on the natural contaminants as well as the flow features marked by the mixing of the jet with the sea water. Hence, the application of PIV is, in some ways mimics Image Correlation Velocity (ICV) which attempts to fit 'a best' velocity field to minimize some cost function. In this application it is likely to provide (1) a depth averaged entrainment velocity and (2) phase speed of the features at the edge of the jet.

I suggest to include in the last paragraph

"Not all of the experts..."

"These included,....., using well-established similarity characteristics of turbulent jets,

Quoting Bill.Lehr@noaa.gov:

Attached is my draft report to the FRTG

o Please send corrections to me as soon as possible
o Juan, your ppt will be included as an appendix
o Pedro, I put your old version in as a placeholder because the new one was not displaying properly. Perhaps you could send it to me as a pdf file?

3233467410-52415-18568-139-73

o Jim, Alberto, and Omer, I need you bio's

Alberto Aliseda

Assistant Professor

Phone: (206) 543 4910

Department of Mechanical Engineering

8047

MS 352600

aaliseda@u.washington.edu

University of Washington

Seattle, WA 98195-2600

FAX: (206) 685