

F-2

**IIHR FLUME
STUDY**

COMMENTS RE: SCOPE (MAYNORD)

rgaines

From: Maynard, Stephen T WES [MAYNORS@wes.army.mil]
Sent: Thursday, May 25, 2000 8:57 AM
To: 'rgaines'
Subject: RE: IIHR Scope

Andy,

I recommend the following changes:

- 1) divide all flow depths by 2.0. This would change range of aspect ratios from 0.625-5.0 to 1.25-10.0. I believe this is a more realistic range of what we are now using and what we might use in the future.
- 2) omit last test on series I-1 because depth will be too low if depths are halved.
- 3) Add test to series I-2a with 200 mm width and 10 mm depth to get your desired range of distortion. Consider adding test in 400 mm flume with 20 cm depth that can be our "prototype" and will have same aspect ratio as 200mm wide with 10 cm depth.
- 4) Add test with other structure material.
- 5) Add one test in 50 mm flume with surfactant.

Steve

Call Ettema and see if he is available tomorrow morning. I have a 9:00 mtg now.

Steve

-----Original Message-----

From: rgaines [mailto:rgaines@umr.edu]
Sent: Wednesday, May 24, 2000 7:43 AM
To: 'Maynard, Stephen T WES'
Subject: IIHR Scope

Steve,

I've looked over Dr. Ettema's scope briefly. It looks more like what we had been discussing (most recently) as a "pared down" version of my original scope of work. One change I'd like to see is to add several tests to include a larger vertical distortion. Instead of using a maximum G of 8, I think we should add one more where G=16. This would only add 4 tests to each grouping where vertical distortion effects would be looked at (or 8 total experiments). Adding the vertical distortion of 8 would also add another aspect ratio (see Table 1 of the scope). Since the flume would already be set up, additional costs for adding these should be fairly minimal exclusive of the PIV processing/interpretation. We want to be sure to get a copy of the MS thesis that results from this work.

Dr. Ettema suggested that I wait 2-3 weeks since the master's student I'd be working with is in China till then. I'll talk to him more on this tomorrow or Friday.

Let me know what you think about changing the scope and what you think about budget for the work. Do you know anything about the IIHR flume? It may be set up for conducting these types of experiments thereby reducing prep time. If so, costing out the experimental part may be relatively straightforward. I don't have any feel for what the PIV work would require. I also haven't found out what the costs are for PIV software (Commercial or the IIHR version with GUI development costs). It'd be great if we could incorporate whatever is necessary in this scope -- one time without having to modify later.

Next Week
Iowa City

next week

A new digital video camera (same one that IIHR uses) is on its way to me as I type.

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Optical Flow Systems

⇒ several levels

core/basic tools

↳ \$3890

upper level / adv. analysis

probably
don't
need



+ \$4500

ARS Oxford