
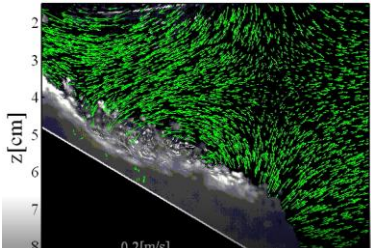
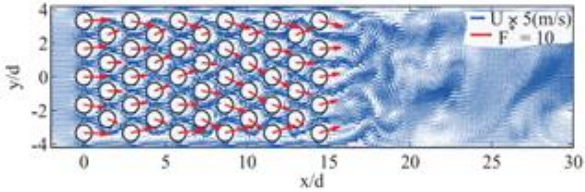


## Requests for Collaboration

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<b>Research Interests</b>	
<ul style="list-style-type: none"><li>● Experimental and computational fluid mechanics</li><li>● River and coastal engineering</li><li>● Environmental recovery technology in coastal zone</li><li>● Multiple water disaster over low land</li></ul>	
<b>Creative Achievements in The Application of New and Existing Science and Technology</b>	
<p>(1) A Particle Tracking Velocimetry algorithm for measuring faster velocity field by capturing path lines. (2) A liquid-solid flow solver which can trace each particle motion with the Discrete Element Method. (3) A numerical simulator for fluid flow field including complex boundary using the Immersed Boundary Method</p>	
	
<p>Measurement result of liquid-solid flow field by (1)</p> <p>An example of calculation results by (3)</p>	
<b>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</b>	
<ul style="list-style-type: none"><li>● 3-D measurement technology of fluid velocity field by synchronized high speed cameras with controllable focus length by a PC.</li><li>● Automatic algorithm for identifying what are captured in images using machine learning tools.</li></ul>	
<b>A List of 5 Key Publications</b>	
<ul style="list-style-type: none"><li>• An Experimental Study on the Interaction between Oscillatory Flow and Idealized Porous Bed, <u>Takaaki Shigematsu</u>, Sota Nakajo and Yuya Okada, <i>Journal of Coastal Research</i>, Special Issue 85, 981-985, 2018.</li><li>• Turbulent Flow Induced by Oscillatory Circular Cylinder Arrays, Takaaki Shigematsu and Hiroshi, Matsumoto, <i>Proceedings of International Conference on Coastal Engineering</i>, 2018 (in printing).</li><li>• Development of a Wave-Power Generation System Using a Slit Type Break Water, T. Wakimoto, K. Katoh, <u>T. Shigematsu</u>, and S. Yoshioka, <i>Proc. 12th Int. Symp. on Advanced Science and Technology in Experimental Mechanics</i>, paper No. 98(CD ROM), 2017.</li><li>• Estimation Method of Oxygen Penetration Depth into the Bottom Sediment at Strongly-Enclosed Sea Area, Takaaki Shigematsu and Toru Endo, <i>Journal of Coastal Research</i>, 64, 1633 – 1637, 2011.</li><li>• Application of three-dimensional hybrid stereoscopic particle image velocimetry to breaking waves, Yasunori Watanabe, Yoshiyasu Hideshima, <u>Takaaki Shigematsu</u> and Kohsei Takehara, <i>Measurement Science and Technology</i>, Vol. 17(6), 2006 (<a href="http://stacks.iop.org/0957-0233/17/i=6/a=025">http://stacks.iop.org/0957-0233/17/i=6/a=025</a>).</li></ul>	