



Sandia's Recent MHK Field and Laboratory Works

Budi Gunawan

CalWave/Sandia Meeting

Albuquerque, NM

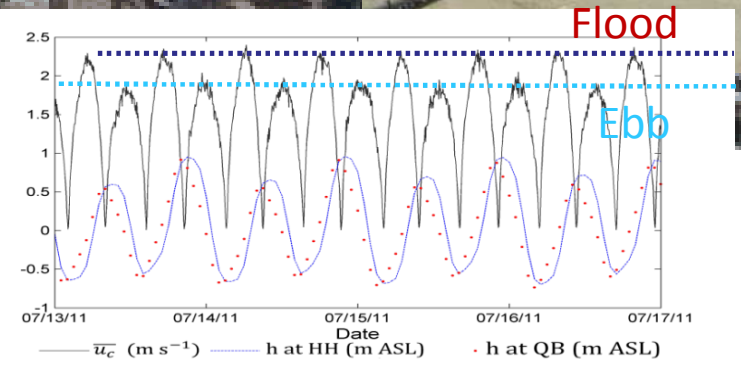
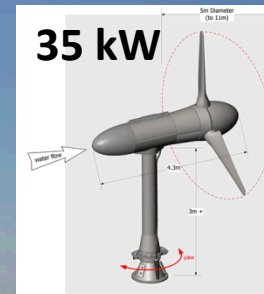
March 16, 2017



Verdant Power RITE site

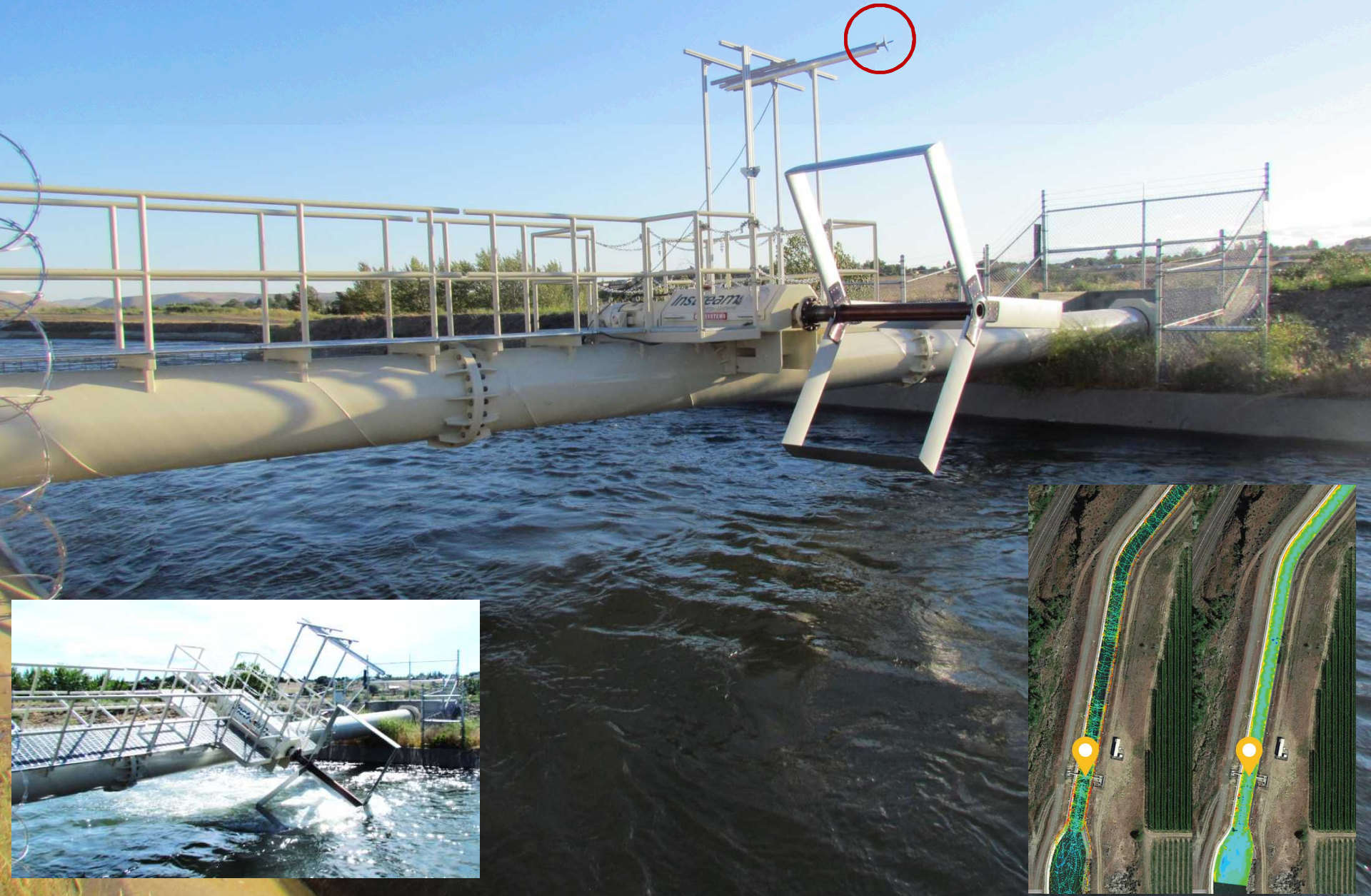


Channel width ~200m
Depth ~7 - 10 meter
Mean tidal range = 1.3 m
Mean current speed = 1.4 m/s
Max current speed = 2.4 m/s

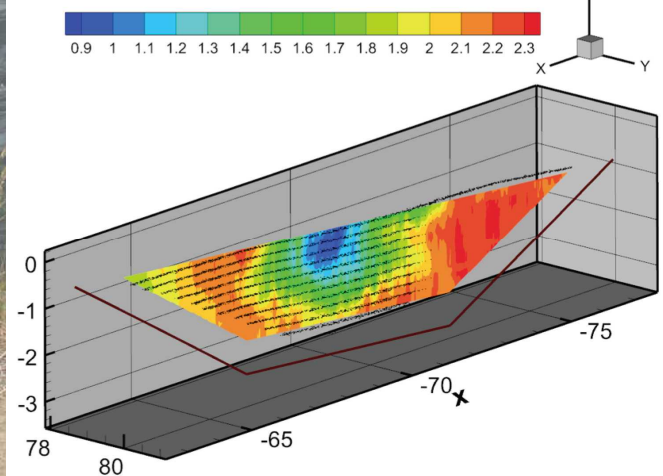
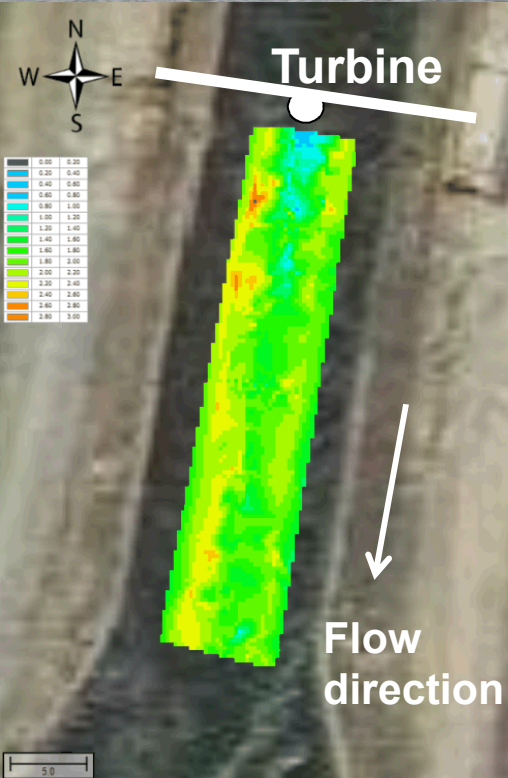
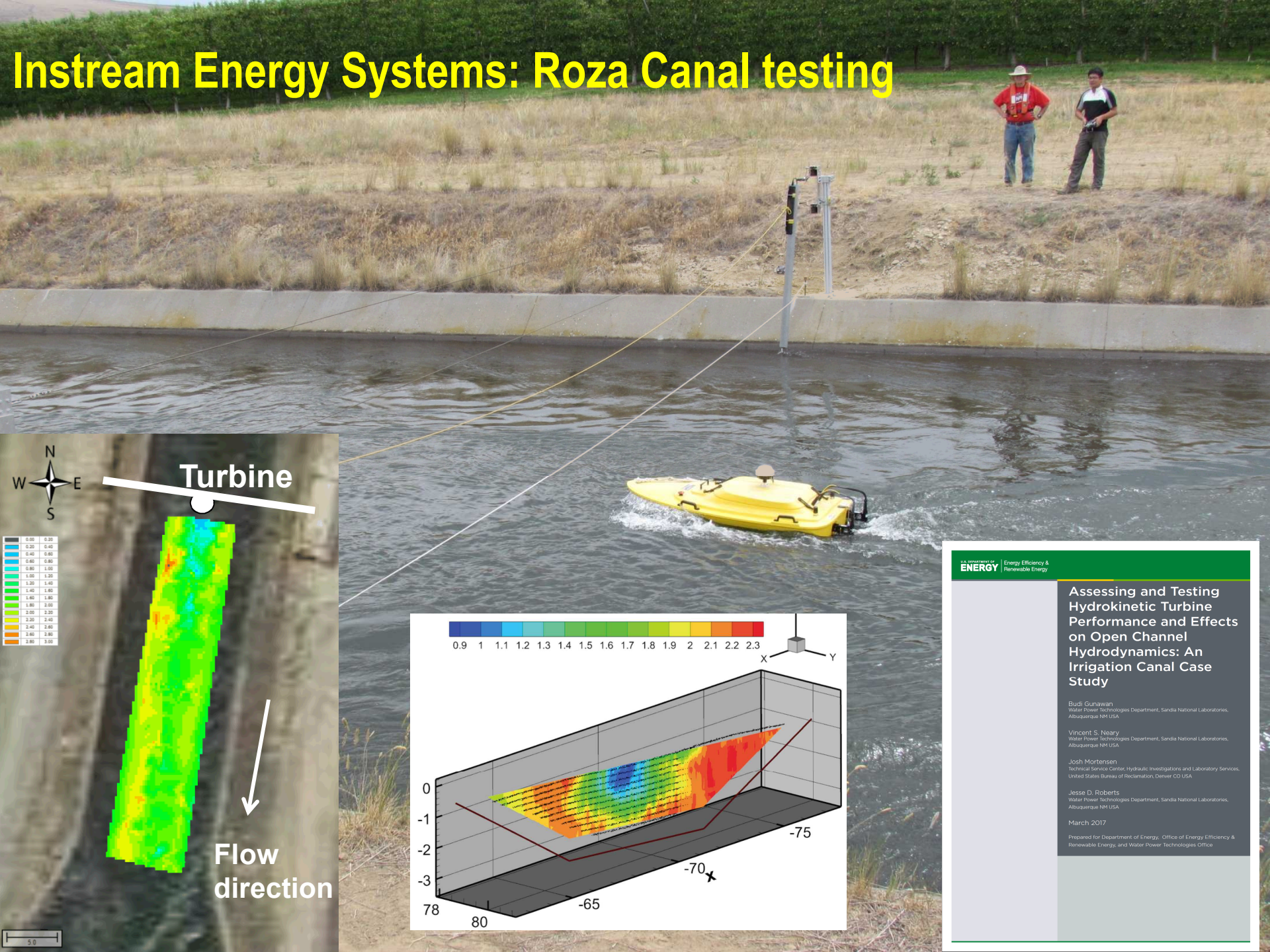


Gunawan, B., Neary, V.S. and Colby, J. (2014) Tidal energy site resource assessment in the East River Tidal Strait, near Roosevelt Island, New York, New York. Renewable Energy, Volume 71, November.

Instream Energy Systems: Roza Canal testing



Instream Energy Systems: Roza Canal testing



ENERGY Energy Efficiency & Renewable Energy

Assessing and Testing Hydrokinetic Turbine Performance and Effects on Open Channel Hydrodynamics: An Irrigation Canal Case Study

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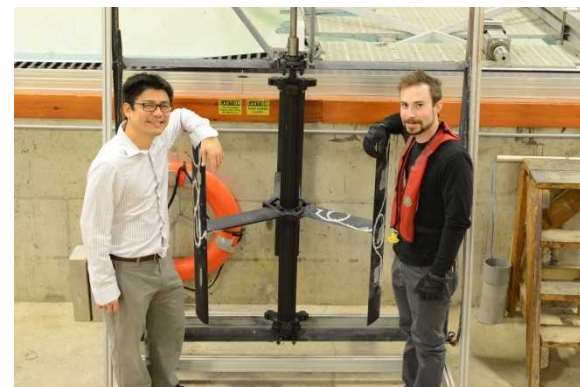
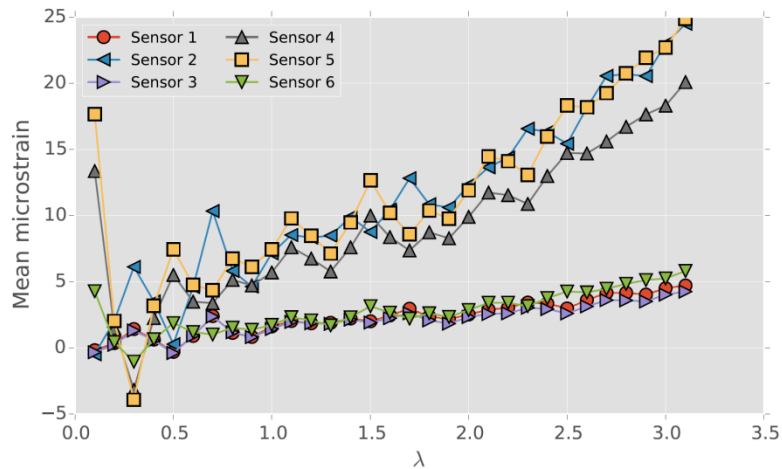
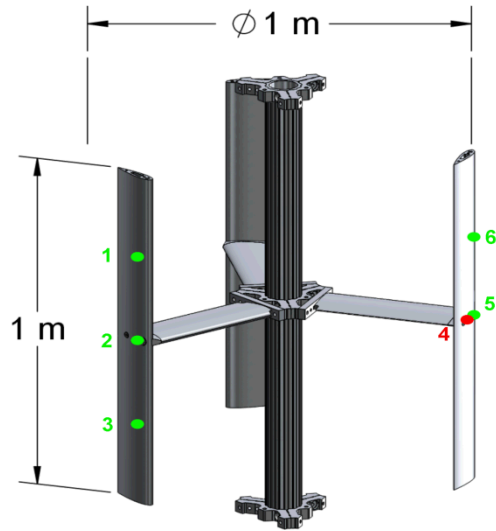
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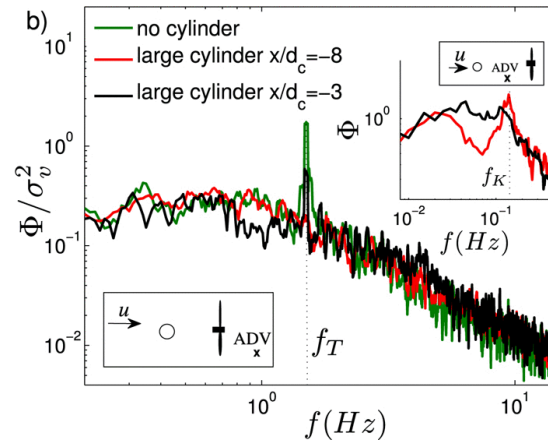
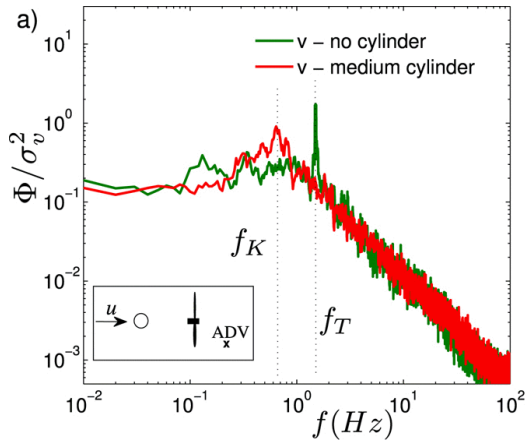
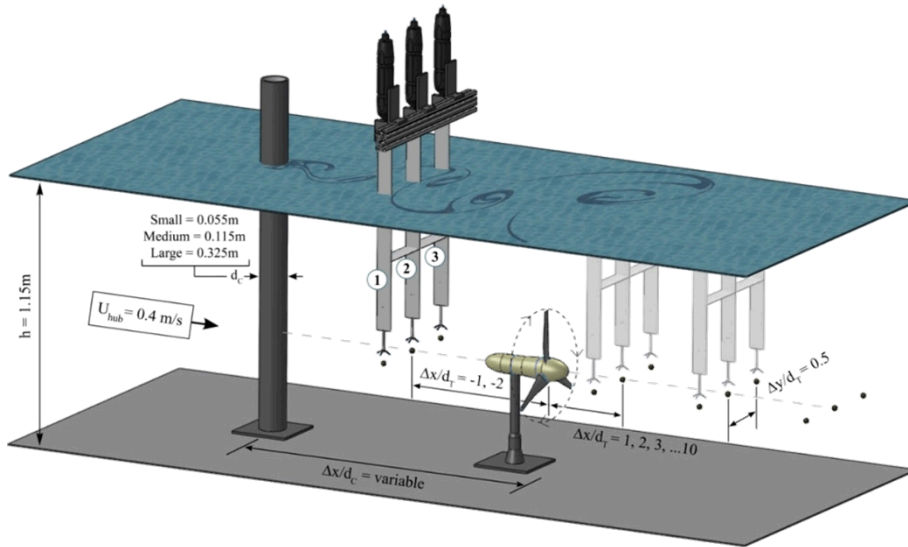
March 2017

Prepared for Department of Energy, Office of Energy Efficiency & Renewable Energy, and Water Power Technologies Office

FBG tow tank testing

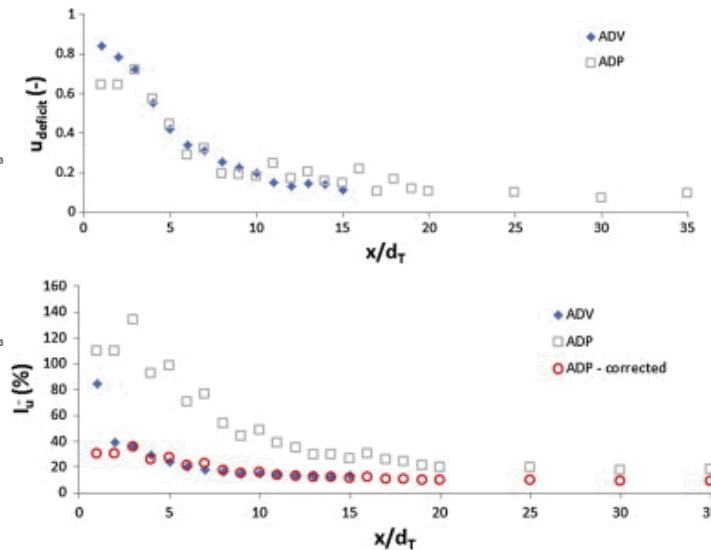
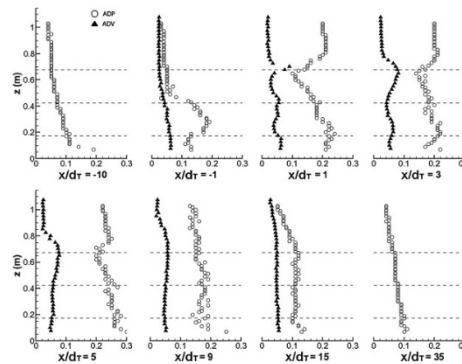
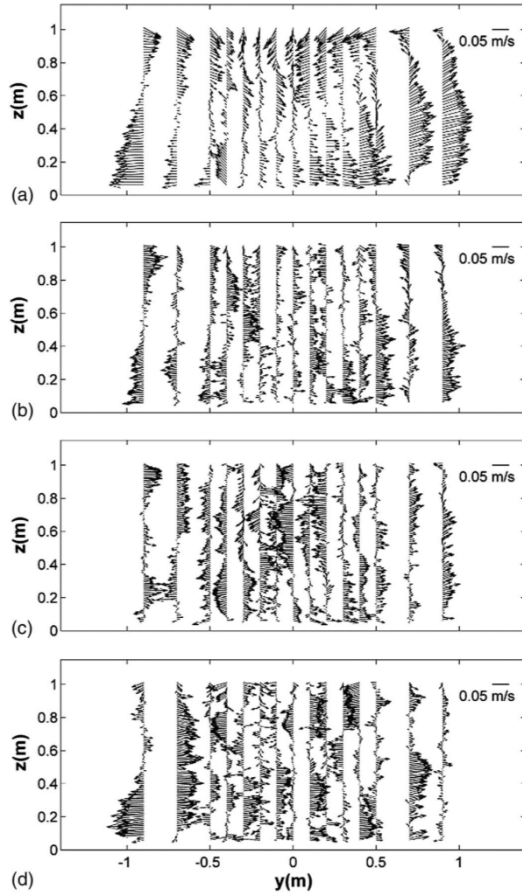


Perturbed inflow



Chamorro, L.P., Hill, C., Neary, V.S., Gunawan, B., Arndt, R.E.A. and Sotiropoulos, F.
 Effects of energetic coherent motions on the power and wake of an axial-flow turbine.
 In review Physics of Fluids.

ADCP and ADV error assessment



Gunawan, B., Neary, V.S. and Hill, C. (2017) Comparison of fixed and moving vessel ADCP measurements in a large laboratory flume. *Journal of Hydraulic Engineering*

Neary, V.S., Gunawan, B., Hill, C. and Chamorro, L.P. (2013) Near and far field flow disturbances induced by model hydrokinetic turbine: ADV and ADP comparison. *Renewable Energy*, Volume 60, December.