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Results from the field test of two 1 kW oscillating hydrofoil generators in a tidal canal[1] MICHAEL MILLER, JENNIFER CARDONA, LEANNE BLOCK, KENTA KONDO, MICHAEL LEE, REBECCA LORICK, MICHAEL MANNING, ISABEL SCHERL, FILIP SIMESKI, ARRIANE SPAULDING, YUNXING SU, Brown University, DAVID ELLERBY, Wellesly College, ERIKA SUDDERTH, KRISTEN LEWIS, Volpe - The National Transportation Authority, JAMES KIDD, WILLIAM HUBBARD, HUNG TOM PHAM, Massachusetts Maritime Academy, TOM DERECKTOR, STEVE WINCKLER, BluSource Energy, Inc, ALICE FAWZI, JENNIFER FRANCK, KENNETH BREUER, SHREYAS MANDRE, Brown University — We present results from field tests of two 1 kW hydrokinetic energy capture devices operating in the Cape Cod Canal, in Bourne, MA. Each device consists of two oscillating hydrofoils with a chord of 0.24 m and span of 1.35 m, operating 90° out of phase with each other and driving a single generator. The pitch of each hydrofoil is mechanically coupled to the heave, also with a 90° phase difference. The two devices are arranged in tandem with a streamwise separation of 1 span. We find that depending on the operating conditions, the hydrofoil oscillations may synchronize with each other through hydrodynamic interactions. Furthermore, in their optimized operation, the trailing device generates 60-80

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