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M.S. PLAN B

PRESENTATION & DEFENSE

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HOLMES HALL 400

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**Hydrodynamic Modeling of Pelamis[®] P1-750 Wave
Energy Converters using WAMIT[™] Software**

ABSTRACT

Large scale Wave Energy Conversion (WEC) devices using segmented hinged bodies have been proposed and tested for the past 30 years, including the Hagen-Cockerell Raft. This research led the way for companies like Pelamis[®] to design the 3 hinged P1 WEC. The device was built, tested, and a targeted Power Matrix was published for varying wave conditions. This study intends to use the WAMIT[™] software to calculate the hydrodynamic motions of the hinges with a linear power take off system in order to approximate the targeted Power Matrix. In addition, the same method will be used for several devices in order to investigate how the spacing of multiple machines affects motions and power output. This may suggest optimal configurations for a large number of hinged Pelamis[®] P1 WECs.

