



JMU PHYSICS AND ASTRONOMY SEMINAR

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Why Unmanned Systems?

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Abstract:

This seminar presents the fundamentals of unmanned systems (UxS: unmanned air system, unmanned undersea system, and unmanned surface system), its challenges and new capabilities, and the future possibilities for diverse applications. In addition, this presentation will also be focusing on several enabling technologies and their respective trends.

One of the most notable technological advancements in the 21st century is unmanned systems (including robotics): full integration of the physical, artificial intelligent, and cybernetic (the internet of things) world. As a promising contender for the next major technological advancement succeeding the present third (digital) revolution, unmanned systems are establishing an ever increasing and significant role in society for its impact in every aspect of life all over the world, including medicine and healthcare, building service, manufacturing, food production, logistics, transportation, and military applications.

Unmanned systems are already here, and growing more diverse through size, weight, shape, and human and platform interface to accommodate specialized purposes. Since unmanned systems are highly coupled systems, it requires a system of systems engineering approach. Unmanned systems will increase maritime operational safety for sailors and marines, provide flexibility for decision makers, and enhance success of its missions; all while, reducing the total cost of maintaining and implementing pre-planned or real-time operations.