

# Physics Seminar

Wednesday, February 12, 4:30 pm  
Science & Engineering Building Auditorium

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## **The Development and Evolution of Aeronautical Mobile Airport Communications Systems: AeroMACS**

A new aviation-specific transmission technology, based on IEEE 802.16-2012 (WiMAX), is nearing its developmental completion for airport surface communications. The proposed technology, known as Aeronautical Mobile Airport Communications System, AeroMACS, will be used to support fixed and mobile ground to ground applications and services. AeroMACS has progressed from concept through prototype, testing, standards development, and is now poised for the first operational deployments at nine US airports by the Federal Aviation Administration. We argue that the IEEE 802.16j-amendment-based WiMAX is most feasible for AeroMACS applications and its future evolution. This amendment introduces multihop relay as an optional deployment that may be used to provide various network performance enhancements such as radio outreach extension and capacity improvement. IEEE 802.16 standards and WiMAX networks are introduced. Challenges of broadband signaling through the airport surface radio channel are discussed. AeroMACS is briefly reviewed. IEEE 802.16j-based Multihop Relays and their applications and benefits for AeroMACS are presented.

*Please join us for light refreshments  
at 4:15pm outside SEB 203.*