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Experimental and Computational Studies of the RF Plasma Sheath NATHANIEL HICKS, University of Alaska Anchorage — A new experimental and computational plasma physics program is underway at the University of Alaska Anchorage (UAA). The underlying objective is to equip a new plasma laboratory with basic plasma physics apparatus (vacuum vessel, pulsed power, diagnostics) for general plasma studies that can involve undergraduate researchers. The initial experimental focus will be on low power, low temperature plasma volume production in the presence of RF boundary electrodes in order to study the effects of RF on the edge plasma, plasma sheath, and particle transport. The experimental studies are to be complemented by ongoing computational particle-in-cell modeling of the same problems. Another aspect of the program will be to collaborate with other institutions on the development of plasma diagnostics applicable to a wide range of magnetic confinement devices. Examples and initial computational results from these studies will be presented.

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