

[Daniel Quillen \(Oxford\)](#)

Module theory for nonunital rings

Room: Little Hall 121
Date: April 10, 2000
Time: 4:00-5:00 p.m.
Cookies and Coffee: at 3:30 in Little Hall 339 (The Atrium)

Introductory Remarks by Graduate Research Professor [John G. Thompson](#)

Abstract:

This lecture discusses a good module theory for a (not necessarily unital) ring A , which is obtained by suitably shrinking the category of all its modules so as to yield the the category of unitary modules when A is unital. When A is idempotent one obtains a nice abelian category consisting of the firm A -modules. The abelian categories arising from idempotent rings in this way are characterized by a theorem of Roos. Using firm module categories one can develop a theory of Morita equivalence for idempotent rings extending the usual Morita theory for unital rings. A natural question in this context is whether Morita equivalent rings have the same higher algebraic K-theory. This result turns out to be true for h-unital rings, and it may be viewed as a generalization of Suslin's excision theorem for higher algebraic K-theory of h-unital rings.

[Photographs from the lecture](#)

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