Module Theory in Sup and its applications

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The lecture series will take place at the Department of Mathematics and Statics, Faculty of Science, Masaryk University, Kotlarska 2, 611 37 Brno, Czech Republic. Each talk will be approx. 90 minutes.

1. Talk: Module Theory in Sup and Enriched Order Theory. (Thursday, October 3, 10.00, Seminar room)

2. Talk: Topological Representation of Semi-Unital Quantales with Applications to C*-algebras. (Thursday, October 3, 14.30, Seminar room
)

3. Talk: Part I: Three-Valuedness --- The First Step Towards Many-Valuedness (Tutorial).
Part II: Applications of Module Theory in Sup to Linear Stochastic Programming. (Friday, October 4, 13.00, Seminar room
)

4. Talk: Preservation of Projective Right Modules in Sup under Duality. (Monday, October 7, 14.00, lecture room M3
)

Abstract

1. Since many people are educated in module theory over abelian groups and NOT over complete lattices, as a first step I will give an introduction into the general principles of module theory in Sup. Among other things I will refer to A. Joyal and M. Tierney 1984. One interesting thing is of course how we derive the related Q-preorder from a given right action over Q. Since the tensor product in Sup plays here an important role, I will also say something about its construction.

2. Applications of module theory in Sup. I proceed now from pure to applied mathematics.

(a) Topological representation of semi-unital quantales with applications to C*-algebras.
(b) Three-valuedness ---- the first step towards many-valuedness.
(c) Applications of module theory in Sup to linear stochastic programming.
(d) Projective right modules and their dual right modules over involutive and unital quantales: The problem of the preservation of their projectivity.