TV THEORIES WITH DEFECTS AND REPRESENTATION THEORY

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Three-dimensional topological field theory with defects, also referred to as topological field theory on manifolds with singularities, has recently been considered in several contexts.

Defects arise naturally in many applications; they also provide novel structural insight into topological field theories, e.g. by exhibiting Brauer-Picard groups of spherical fusion categories as symmetries of TFTs of Turaev-Viro type.

In our talk, we focus on the relation between structures in topological field theories with defects and the theory of (bi-)module categories over fusion categories.

References

[1] J. Fuchs, C. Schweigert and A. Valentino, "Bicategories for boundary conditions and for surface defects in 3-d TFT", *Commun.Math.Phys.*, Vol. 321 543-575 (2013).
[2] J. Fuchs, C. Schweigert and A. Valentino, "A geometric approach to boundaries and surface defects in Dijkgraaf-Witten theories", *Commun.Math.Phys.*, Vol. 332 981-1015 (2014).

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