Speaker: **Kerler, Thomas**
Title: *Cyclotomic Integer Expansions of TQFT's*
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Abstract: Invariants of 3-manifolds that are part of TQFT's are highly structured, and as such contain information about characteristic surfaces within a 3-manifold. A vast amount of TQFT's are indeed available, such as the Reshetikhin Turaev Theory and others descending from gauge theories. However, very little has been known about the detailed structure of these TQFT that would permit explicit theorems for 3-manifolds. We will give a rather detailed analysis of the Fibonacci TQFT and, from that, develop a more general theory of finite length TQFT. As applications we present concrete results on cut-numbers of 3-manifolds, as well as structural prediction for the Casson Invariants as well as a Torsion extension of the latter. Part of this work is joint with Pat Gilmer.