

Massachusetts Institute of Technology
Department of Physics

Condensed Matter Theory Seminar

“Understanding $O(N)$ symmetry for non-integer N via Deligne categories.”

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Abstract: In QFT, we often analytically continue in the number of field components, or in the number of spatial dimensions. I always wished to know which rigorous mathematics underlies these computations. What replaces group symmetries and irreducible representations when one goes to non-integer dimensions? It turns out that the appropriate language is provided by symmetric tensor categories introduced by Pierre Deligne in 2004. They have since been studied by mathematicians, and their relevance to QFT and lattice models was pointed out in our recent work 1911.07895. This blackboard talk will expose relevant ideas, without assuming any prior familiarity with categories. (Joint work with Damon Binder).

12:00pm noon
Wednesday, February 26, 2020
***Cosman Seminar Room (6C-442)**