

## **Many Body Localisation**

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It would be good if the students had some familiarity with two topics: entanglement entropy, and the transverse-field Ising model in the Majorana language. Both are discussed in this lecture note:

[https://dl.dropboxusercontent.com/u/3863970/SchoolLectures/TOPO2015/TOPO2015\\_Cargese\\_MBL\\_Glass.pdf](https://dl.dropboxusercontent.com/u/3863970/SchoolLectures/TOPO2015/TOPO2015_Cargese_MBL_Glass.pdf)

Overall, my lectures will span some of the contents of this note, as well as topics covered in the review by Nandkishore & Huse (<http://arxiv.org/pdf/1404.0686v2.pdf>), and recent papers with Vasseur, Potter and others:

1. **\*Universal properties of many-body delocalization transitions**

<[https://sites.google.com/site/sidparameswaran/26QG\\_TF\\_PT.pdf?attredirects=0](https://sites.google.com/site/sidparameswaran/26QG_TF_PT.pdf?attredirects=0)>\*,  
A.C. Potter, R. Vasseur and **\*S.A. Parameswaran\***, *Phys. Rev. X* **5**, 031033 (2015).

2. **\*Particle-hole symmetry, many-body localization, and topological edge modes\***

<<https://sites.google.com/site/sidparameswaran/32%20AIII-MBL.pdf?attredirects=0>>\*,  
R. Vasseur, A. J. Friedman, S. A. Parameswaran and A. C. Potter, arXiv:1510.04282 (2015).